Theses and Dissertations   1. Thesis and Dissertation Collection, all items

2019-06

A COMPARATIVE ANALYSIS OF DOD AND FEDERAL NON-DOD COR COMPETENCIES

Johnson, Kiersten M.; Keys, Bryan D.; Lee, Phillip

Monterey, CA; Naval Postgraduate School

http://hdl.handle.net/10945/62859

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

JOINT APPLIED PROJECT REPORT

A COMPARATIVE ANALYSIS OF DoD AND FEDERAL NON-DoD COR COMPETENCIES

June 2019

By: **Kiersten M. Johnson**
          Bryan D. Keys
          Phillip Lee

Advisor: Timothy J. Winn
Co-Advisor: Michael Vukovich,
              NSWCCD West Bethesda, MD

Approved for public release. Distribution is unlimited.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE		*Form Approved OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 2019	3. REPORT TYPE AND DATES COVERED Joint Applied Project Report
4. TITLE AND SUBTITLE A COMPARATIVE ANALYSIS OF DoD AND FEDERAL NON-DoD COR COMPETENCIES		5. FUNDING NUMBERS
6. AUTHOR(S) Kiersten M. Johnson, Bryan D. Keys, and Phillip Lee		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.	12b. DISTRIBUTION CODE A

13. ABSTRACT (maximum 200 words)

The purpose of this research is to analyze and measure the effectiveness of the guidance for identification, development, certification, and management of contracting officer's representatives (CORs) within the Department of Defense (DoD) in comparison to Federal Acquisition Certification for Contracting Officer's Representatives (FAC-CORs). The research team utilized responses from the DoD COR Competencies Survey and provided recommendations on its findings to improve training and technical competency structures in order to leverage best practices from the FAC-COR structures. Although the research did not demonstrate a statistically significant difference in proficiencies between DoD-CORs and FAC-CORs, the results demonstrated a strong correlation between time-spent and proficiencies, which allows for areas of further research. Regarding the proficiencies of the DoD-CORs and FAC-CORs, it is evident that there are areas the DoD can improve through coordination with FAC-CORs and Federal Acquisition Institute.

14. SUBJECT TERMS Contracting Officer's Representative, competencies, training, Defense Acquisition Workforce Improvement Act, Federal Acquisition Institute			15. NUMBER OF PAGES 83
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

A COMPARATIVE ANALYSIS OF DoD AND FEDERAL NON-DoD COR COMPETENCIES

Kiersten M. Johnson, Civilian, Department of the Navy
Bryan D. Keys, Civilian, Department of the Army
Phillip Lee, Civilian, Department of the Navy

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN CONTRACT MANAGEMENT

from the

**NAVAL POSTGRADUATE SCHOOL
June 2019**

Approved by: Timothy J. Winn
                Advisor

                Michael Vukovich
                Co-Advisor

                Brett M. Schwartz
                Academic Associate, GSBPP Program Office

THIS PAGE INTENTIONALLY LEFT BLANK

A COMPARATIVE ANALYSIS OF DoD AND FEDERAL NON-DoD COR COMPETENCIES

ABSTRACT

The purpose of this research is to analyze and measure the effectiveness of the guidance for identification, development, certification, and management of contracting officer's representatives (CORs) within the Department of Defense (DoD) in comparison to Federal Acquisition Certification for Contracting Officer's Representatives (FAC-CORs). The research team utilized responses from the DoD COR Competencies Survey and provided recommendations on its findings to improve training and technical competency structures in order to leverage best practices from the FAC-COR structures. Although the research did not demonstrate a statistically significant difference in proficiencies between DoD-CORs and FAC-CORs, the results demonstrated a strong correlation between time-spent and proficiencies, which allows for areas of further research. Regarding the proficiencies of the DoD-CORs and FAC-CORs, it is evident that there are areas the DoD can improve through coordination with FAC-CORs and Federal Acquisition Institute.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
AT&L	Acquisition Technology and Logistics
AWCS	Acquisition Workforce Competency Survey
CFR	Code of Federal Regulations
CLC	Continuous Learning Course
CLCs	Continuous Learning Points
CO	Contracting Officer
COR	Contracting Officer's Representative
COTR	Contracting Officer's Technical Representative
CTIP	Combating Trafficking in Persons
DACM	Director of Acquisition Career Management
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DFARS	Defense Federal Acquisition Regulation
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoN	Department of the Navy
DPAP	Defense Procurement and Acquisition Policy
EVM	Earned Value Management
FAC-COR	Federal Acquisition Certification for Contracting Officer's Representatives
FAI	Federal Acquisition Institute
FAR	Federal Acquisition Regulation
GAO	Government Accountability Office
HCI	Director of Human Capital Initiatives
HRPO	Human Research Protection Official
HSR	Human Subjects Research
IRB	Institutional Review Board
NPS	Naval Postgraduate School
NSO	Navy Survey Office

OFPP	Office of Federal Procurement Policy
OGE-450	Office of Government Ethics Form 450
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OPNAV	Office of the Chief of Naval Operations
OPTEMPO	Operational tempo
OSD	Office of the Secretary of Defense
OUSD(AT&L)	Office of the Under Secretary of Defense (Acquisition, Technology and Logistics)
PWS	Performance Work Statement
QASP	Quality Assurance Surveillance Plan
SECDEF	Secretary of Defense
SOOs	Statement of Objectives
SPEs	Senior Programming Executives
USMC	United States Marine Corps
WSARA	Weapon Systems Acquisition Reform Act

ACKNOWLEDGMENTS

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

The Federal Acquisition Regulation (FAR) states that "a contracting officer's representative (COR) assists in the technical monitoring or administration of a contract" (FAR 1.604) and defines a COR as "an individual, including a contracting officer's technical representative (COTR), designated and authorized in writing by the contracting officer to perform specific technical or administrative functions" (FAR 2.101). The title Contracting Officer Technical Representative (COTR) is no longer formally recognized in order to align with the COR definition and responsibilities found in FAR 1.602-2 (Gordon, 2011). The Defense Federal Acquisition Regulation (DFARS) defines a COR using precisely the same language as FAR 2.101 and makes no additional supplement to FAR 1.604 as to the role and function of a COR (2014).

There is therefore no formal differentiation between the role and definition of a Department of Defense (DoD) COR and a federal-wide non-DoD COR. Nevertheless, the Office of Federal Procurement Policy (OFPP) within the Office of Management and Budget (OMB) has established a risk-based, three-tiered certification program for the role of a COR for executive agencies (Gordon 2011). The tiers and training requirements are directly related to the complexity and dollar value of the contracts being monitored. All federal executive agencies use this certification program with the only exception being the DoD (OFPP 2011). Chapter 12 of Division B in subtitle I of Title 41 of the United States Code (41 U.S.C.) had delegated twelve statutory responsibilities to the Federal Acquisition Institute (FAI). The most significant of these responsibilities related to this research, is to, "periodically analyze acquisition career fields to identify critical competencies, duties, and tasks and then to identify related academic prerequisites, skills and knowledge" (41 U.S.C 1201(a)(4)) to include a COR certification program.

While fellow executive agencies adhere to the OFPP's guidance, the DoD took a different route in establishing its own policies, standards, responsibilities, and procedures to assign, certify, and guide CORs. Their policies and procedures are based on the recommendations of the DoD Panel on Contracting Integrity findings as outlined in the Department of Defense Instruction 5000.72 (DoDI 5000.72, 2015). Section 813 of the John

Warner National Defense Authorization Act for Fiscal Year 2007 directed the DoD to convene a panel of senior leaders to, "conduct reviews of progress made by the Department of Defense to eliminate areas of vulnerability of the defense contracting system that allow fraud, waste, and abuse to occur" (NDAA, 2007, Sect. 813(b)(1)). Section 813 further required the panel to, "recommend changes in laws, regulations, and policy that it determines necessary to eliminate such areas of vulnerability" (NDAA, 2007, Sect. 813 (b)(3)). Furthermore, it required the panel must submit a report annually on its activities and findings, known as the DoD Panel on Contracting Integrity Report to Congress. In its first report to Congress titled *Panel on Contracting Integrity, 2007 Report to Congress,* the Office of the Undersecretary Secretary of Defense, Acquisition Technology and Logistics (AT&L) cited a significant lack in contract surveillance as an area of vulnerability permitting fraud, waste, and abuse (DoD, 2007). Subsequently, the panel recommended a plethora of changes to the function, responsibilities, and most importantly competencies, training, and certification requirements for DoD CORs over the next several years. By 2010, the panel put in place a three-tiered contract classification system based on contract type and put together pilot Defense Acquisition University (DAU) training courses titled "Contracting Officer Representative" Continuous Learning Course (CLC) 222 and COR 222 (DoD 2010). The objectives for each course were the same, CLC 222 provided the information via an online self-guided distance-learning module and COR 222 provided the information in standard classroom format with instructors (DoD, 2010). The panel established other requirements, such as annual ethics training, dependent on the type of contracts being monitored. Interestingly, the DoD uses the criteria of contract type to determine which of the three types of certification levels are to be required. Ultimately, this work resulted in the DoDI 5000.72, which was published on 26 March 2015 to establish uniform guidance for identification, development, certification, and management of CORs within the DoD (DoD, 2015).

A.   PROBLEM IDENTIFICATION

Since the panel's implementation of its training standards, it has not taken steps to review the effectiveness of the new standards. Section 813(e) of the John Warner National Defense Authorization Act, 2007, specifically called for the panel to be dissolved 31 DEC

2009 (NDAA, 2007). While this was later revised to 31 DEC 2011, it resulted in only four reports being released by the panel in, 2007, 2008, 2009, and 2010. The Weapon Systems Acquisition Reform Act (WSARA) of 2009 required the Panel to continue its actions as needed after 31 DEC 2011 at the discretion of the Secretary of Defense (SECDEF) (WSARA, 2009). The Office of the Secretary of Defense (OSD) has published a brief document that describes the Panel's structure and actions each year from 2011 through 2014 but significantly lacks any empirical data or opinions regarding outcomes and effectiveness (DoD, 2014). The research team has concluded the lack of any meaningful continuation or evaluation of this guidance requires a measurable analysis to determine whether the panel's recommendations effectively improved the human capital of the DoD workforce and made contract surveillance sufficient for the needs as intended at the time of the panel being convened.

Over eight years have passed since the DoD has subjectively evaluated the effectiveness of the uniform guidance for identification, development, certification, and management of CORs within the DoD, originally produced in 2010. To date, no quantifiable or objective analysis has been conducted to measure the effectiveness of this guidance. In contrast, as part of its delegated responsibilities, the FAI collects a myriad of data to in order to, "analyze acquisition workforce data from the Office of Personnel Management (OPM), the heads of executive agencies, and, through periodic surveys, from individual employees" (41 U.S.C 1201(a)(3)) in order to evaluate and measure training and development efforts. Although the DoD has failed to collect data to analyze and prove in any meaningful way, there is no shortage of literature that highlight the continued contract surveillance shortfalls due in part by inadequately trained and incompetent DoD CORs. Therefore, this research is focused on comparing the proficiency of DoD CORs to non-DoD CORs as a means to identify and improve areas of weakness by answering the following primary and secondary research questions.

- Primary Research Question

How do DoD COR standards and proficiencies compare to non-DoD COR standards and proficiencies?

- Secondary Research Question

What are the lessons learned/best practices the DoD can leverage from Federal Acquisition Certification for Contracting Officer's Representatives (FAC-COR), if any?

In this section, we identified problems in the methodologies used to establish and verify those standards and guidance as it relates to the DoD in order to propose a primary and secondary research question. The next section will address the purpose of this research.

B.   PURPOSE

The purpose of this research is to analyze and measure the effectiveness of the uniform guidance for identification, development, certification, and management of COR's within the DoD in comparison to FAC-COR and identify areas to leverage as lessons learned and best practices. The research team utilized responses from the *DoD COR Competencies Survey* and provided recommendations on its findings to improve training and technical competency structures in order to leverage lessons learned/best practices from the FAC-COR structures. The intended audience for this research includes OSD, Defense Procurement and Acquisition Policy (DPAP), Defense Acquisition Workforce Improvement Act (DAWIA), Director of Acquisition Career Management (DACM) (4th Estate, Department of the Navy, Air Force, and Army), DAU, and all DoD contracting/acquisition personnel. The next section will address the methodology of the analysis and the organization of the research document.

C.   METHODOLOGY AND ORGANIZATION

1.   Methodology

The research team conducted (1) background publication searches, and (2) employed surveys, titled "*DoD COR Competencies*" to current Department of the Navy (DoN) CORs and acquisition personnel.

Publications were collected and analyzed from DoD reports and instructions, FAI reports and instructions, published research from the Naval Postgraduate School (NPS), and other non-DoD sources. These publications were critical in assessing the rationale used

to develop current training, certification and management practices, and competencies for comparison. Non-DoD publications were collected and analyzed to gather information pertaining to competency structures and best practices that have been conducted under similar scenarios to provide recommendations and propose future research.

The research team employed the *DoD COR Competencies Survey* to current DoN CORs, which contained the same questions found in the *FY16 Acquisition Workforce Competency Survey (AWCS) Report* to determine proficiency ratings in technical and business competencies for a one to one comparison to FAC-CORs. The FY16 AWCS survey was administered by FAI to the civilian agency federal acquisition community from 2 November 2016 to 4 December 2016 and subsequently published its results on 4 May 2016.

2.   Organization

This research consists of five chapters. The first chapter summarizes the problem and methodology used to analyze the problem. The second chapter compares and contrasts the published regulations and policies that codify the training, experience, competencies, and responsibilities of DoD COR to FAC-COR certification. The third chapter provides a description of the data collected, format and content of the *DoD COR Competencies Survey*, and how the analysis was performed for comparison to the FY16 AWCS. The fourth chapter provides a summary of the comparative analysis in terms of the proficiency and time spent between DoD CORs and FAC-CORs. The last chapter provides answers to the research questions, a detailed conclusion, and provides areas for future research.

This chapter briefly discussed the development of COR standards and guidance between the DoD and other federal agencies, and identified the problem, purpose, methodology, and organization the research team implemented to conduct the analysis and build the research document.

THIS PAGE INTENTIONALLY LEFT BLANK

II.   BACKGROUND

As a result of the Office of Federal Procurement Policy Act of 1974, CORs were established in the FAR to assist COs in performing oversight activities on contracts. They are required by the FAR and DFARS for assisting with contract oversight and execution. The standards used today for CORs were originally developed by the DoD Panel on Contracting Integrity as a means to respond to the federal government's growing reliance on contracting goods and services from the private sector (Schinasi, 2006). The policies and guidance generated by that Panel directly impact the readiness and ability of CORs to perform their required tasks. This chapter provides an overview of the classifications for CORs. It describes the Contracting Integrity Panel's formation, responsibilities, and the resulting actions that came from its recommendations for improving the performance of CORs in federal acquisitions. Finally, this chapter describes the competency requirements for DoD and FAC-CORs. Finally, it reviews the FAI AWCS Report.

A.   COR CLASSIFICATIONS

The primary question for this research is how DoD COR standards and proficiencies compare to FAC-COR standards and proficiencies. Understanding the fundamental difference or origin of the two explains the different standards for certifications. Contracting Officer Representatives are introduced in FAR 1.602-2(d):

> (d) Designate and authorize, in writing and in accordance with agency procedures, a contracting officer's representative (COR) on all contracts and orders other than those that are firm-fixed price, and for firm-fixed-price contracts and orders as appropriate, unless the contracting officer retains and executes the COR duties. See 7.104(e). A COR—
>
> (1) Shall be a Government employee, unless otherwise authorized in agency regulations;
>
> (2) Shall be certified and maintain certification in accordance with the current Office of Management and Budget memorandum on the Federal Acquisition Certification for Contracting Officer Representatives (FAC-COR) guidance, or for DoD, in accordance with the current applicable DoD policy guidance;
>
> (3) Shall be qualified by training and experience commensurate with the responsibilities to be delegated in accordance with agency procedures;

(4) May not be delegated responsibility to perform functions that have been delegated under 42.202 to a contract administration office, but may be assigned some duties at 42.302 by the contracting officer;

(5) Has no authority to make any commitments or changes that affect price, quality, quantity, delivery, or other terms and conditions of the contract nor in any way direct the contractor or its subcontractors to operate in conflict with the contract terms and conditions;

(6) Shall be nominated either by the requiring activity or in accordance with agency procedures; and

(7) Shall be designated in writing, with copies furnished to the contractor and the contract administration office—

  (i) Specifying the extent of the COR's authority to act on behalf of the contracting officer;

  (ii) Identifying the limitations on the COR's authority;

  (iii) Specifying the period covered by the designation;

  (iv) Stating the authority is not redelegable; and

  (v) Stating that the COR may be personally liable for unauthorized acts. (FAR 1.602-2(d)).

The basis for creating the two distinctions of CORs—DoD CORs and non-DoD FAC-CORs—can be found here in FAR 1.602-2(d)(2). CORs are treated differently depending on the department of the federal government in which they are employed: According to FAR 1.602-2(d)(2) all CORs "Shall be certified and maintain certification in accordance with the current Office of Management and Budget memorandum on the FAC-COR guidance, or for DoD, in accordance with the current applicable DoD policy guidance". The standards for certification are very different between the two groups. The FAI is responsible for the current training and certification standards that are in place for FAC-COR (Office of Federal Procurement Policy Act (OFPP), 1974). FAC-COR certifications are based on a COR's years of experience and hours spent in training (Gordon, 2011). DoD COR certifications, by contrast, are based on the complexity of contract being monitored (Carter, 2010). Section C of this chapter specifies the certifications, competencies, and training in greater detail.

The DoD has uniform policies and standards for certifying CORs, and the DoD COR Handbook is the primary resources for further guidance on the appointment and

duties of CORs (DoD, 2015). The DoD Panel on Contracting Integrity recommended these policies and standards (DoD, 2011). As such, the DoD Panel on Contracting Integrity is responsible for all of the current DoD policies for certifying and training CORs. With that in mind, the DoD Panel on Contracting Integrity, its formation, and the results of its actions all have significant impact on the current state of DoD CORs. In the next section we will cover the events leading up to the Panel, how the Panel was formed, and the resulting actions of the Panel and how they impacted CORs and the acquisition workforce.

B.   DOD PANEL ON CONTRACTING INTEGRITY

This section reviews the DoD Panel on Contracting Integrity's formation in response to recently identified areas of vulnerability in DoD contracting (DoD, 2007). It provides the history of the Panel's annual actions to make changes in contracting law, regulations, and policies in order to reduce and eliminate identified areas of vulnerability.

1.   Panel Formation

At the start of the new millennium, the DoD had doubled its amount of obligations, from roughly $130 billion in 2000 to over $270 billion in 2006 (Schinasi, 2006). This increase was a strategic issue for Congress as DoD contracting had been identified as a high-risk area before these developments: The Government Accountability Office (GAO) had deemed Contract Management in the DoD high-risk since 1992 (Schinasi, 2006). While the potential for continued growth in DoD spending was an overstated projection by the GAO, DoD Obligations were $273.5 billion as of 2015 (Maurer, 2017), the rise in obligations from 2000 to 2006 prompted Virginia Senator John Warner to order the Comptroller General to, "conduct a review of efforts by the Department of Defense to identify and assess the areas of vulnerability of Department of Defense contracts to waste, fraud, and abuse" (NDAA, 2006, Sect. 841. (a)). On July 7 of the same year, GAO released report GAO-06-838R, *DOD vulnerabilities to contracting fraud, waste, and abuse*, in which it found that there were five key areas where the DoD was at risk (Schinasi, 2006):

1.   Sustained Leadership

2.   Adequate Pricing

3.   Appropriate Contracting Techniques

4.   Capable Acquisition Workforce

5.   Sufficient Contract Surveillance

The final two areas of significant risk—the lack of both a capable acquisition workforce and sufficient contract surveillance—are very relevant to CORs: The report found that in the risk area of sufficient contract surveillance, proper oversight was not being performed by CORs. The CORs performing contract surveillance functions lacked adequate training, which meant there was not a capable acquisition workforce to perform the necessary oversight functions for monitoring contract performance. This was not a particularly novel development, though, as GAO had already reported in July of 2004 that the DoD lacked enough trained personnel capable of proper contract oversight (Curtin, 2004). In response to these finding, Secretary of Defense (SECDEF) Robert Gates convened the DoD Panel on Contracting Integrity, which was made up of high-level DoD leaders to address all five risk areas identified in GAO-06-838R as well as other emerging issues related to contracting integrity (NDAA, 2007).

2.   Panel Roles and Responsibilities

SECDEF Robert Gates directed the Panel on Contracting Integrity to accomplish three objectives as dictated by the 2007 NDAA:

- Conduct reviews of the DoD's progress in eliminating vulnerabilities in the defense contracting system to fraud, waste, and abuse.

- Review a required Comptroller General report related to vulnerabilities in DoD contracting.

- Recommend changes in law and policy necessary to eliminate such areas of vulnerability. (DoD, 2007, Sect. 813 (b)(1-3))

The panel provided annual reports to the defense and appropriations committees on their progress toward completing these objectives (NDAA, 2007). Originally, the panel

was set to accomplish these objectives and terminate on 31 DEC 2009 but was subsequently extended to for a minimum of 18 additional months and then terminate at the discretion of the SECDEF (WSARA, 2009). This extension was necessary for the Panel to complete implementation of its current recommendations and address issues related to organization conflicts of interest in major defense programs. The panel had a total of ten subcommittees and while all subcommittees had an impact on the issues facing the contracting workforce, most relevant to this research were the two subcommittees for a Capable Contracting Workforce and Sufficient Contract Surveillance.

The Capable Contracting Workforce subcommittee was to create a strategic approach to assessing, developing, and retaining enough human capital to be able to meet the documented contracting workforce needs for the DoD (DoD, 2007). They began by identifying necessary competencies for the COR position and forecasting skill gaps in the current workforce. In its report that year, the subcommittee indicated that it also made resources available to meet the upcoming demand in workforce needs over the next seven years. The bulk of defining the size and skill sets of the future COR workforce took place in this subcommittee.

The Sufficient Contract Surveillance committee reviewed the role of CORs in surveillance of contracts (DoD, 2007). The subcommittee's immediate focus was on performing a holistic review of contract surveillance methods, establishing policies and guidance and training and certification requirements, and determining the roles CORs have in addition to contract surveillance responsibilities. This subcommittee started by defining the training and certification requirements as well as defining each organization's responsibilities to its CORs to support the performance of their duties (DoD, 2007).

3. Panel Findings

The Panel Subcommittees met quarterly for planning and oversight of their progress; at the conclusion of the quarterly cycles, an annual report was written by the Panel on the progress of each subcommittee and the Panel as a whole. From 2008 to 2014, the reports published the actions taken and progress made by the Panel. The following are excerpts from these reports highlighting the major accomplishments of the Capable

Contracting Workforce and Sufficient Contract Surveillance subcommittees. The Capable Contracting Workforce did not perform actions relevant to this research for the years 2010 to 2013, and the Sufficient Contract Surveillance did not perform actions relevant to this research in 2013 therefore reports from those years will not be addressed.

a.   2008 Actions

DPAP and the Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) (OUSD[AT&L]) were tasked with three major activities, which can be found in Figure 1. For the first activity, determining the appropriate workforce size and where growth needed to occur, the Capable Contracting Workforce subcommittee performed an assessment of competencies of the current contracting workforce designated in the 1102 series and workload requirements against the Program Objectives Memorandum (POM) budget for personnel in the 1102 series. The DPAP and the OUSD(AT&L) Director of Human Capital Initiatives (HCI) developed the Defense Acquisition Workforce addendum to the DoD Civilian Human Capital Strategic Plan. The addendum provided goals and objectives for civilian Human Resources departments with the intent of acting as a roadmap for how the departments were to acquire and develop human capital (DoD, 2006). DPAP and the HCI implemented additional funding from Section 852 of the NDAA FY08 (DoD, 2008) in order to support priority workforce initiatives while waiting for the bulk of the competency assessments to be analyzed for implementation in FY09. Senior Programming Executives (SPEs) for each of the Services were then tasked by the Panel to review the results of these assessments and ensuring that Components within their Services planned and enacted them accordingly.

3. Capable Contracting Workforce **Chair: Director, Human Capital Initiatives, OUSD(AT&L)**
• DPAP and senior contracting leaders determine appropriate workforce size. • DPAP and senior contracting leaders develop initial human capital-planning addendum to AT&L Human Capital Strategic Plan. • DPAP and senior contracting leaders resource and implement responsive human capital strategies and supporting recruiting, hiring and retention initiatives (including intern/coop programs).

Figure 1.   2008 Panel Actions related to Capable Contracting Workforce Subcommittee. Source: DoD (2008).

The subcommittee for Sufficient Contract Surveillance combined the second and third actions in Figure 2 for mandating COR assignments and addressing how managers handle oversight of COR performance to reduce administrative actions. After reviewing the processes in place for managing and assigning CORs, the panel discovered that COR assignments occurred post-award to underprepared staff whose performance evaluations rarely, if ever, included reviews of their work as CORs. To remedy this deficit, the Deputy Secretary of Defense put forth guidance requiring that COR assignments occur before a contract is awarded and that the COR functions be considered during an employee's performance evaluation For the task of reviewing COR functions and developing certification standards based on them, the subcommittee put forth a recommendation for three categories of COR types, which are the same standards still in place today. These standards are depicted as Tables 2, 3, and 4 in Section C of this chapter.

6. Sufficient Contract Surveillance
Chair: Chief of Staff , Deputy Assistant Secretary of the Navy (Acquisition & Logistics Management)
• Review Contracting Officer Representative (COR) functions/responsibilities; develop certification standard.
• Mandate COR assignment prior to contract award.
• Process COR appointment through management; ensure performance reviews include COR performance.

Figure 2.   2008 Panel Actions related to Sufficient Contract Surveillance Subcommittee. Source: DoD (2008).

b.   2009 Actions

In 2009, The Capable Contracting Workforce subcommittee addressed the actions in Figure 3. To do so, it made recommendations to increase funding for the purpose of increasing the size of the contracting workforce and retain the qualified individuals present based on competency gaps that had been identified from the research efforts of the previous year (DoD, 2009). DPAP worked with SPEs to develop hiring strategies to address the competency gaps identified and submitted initiatives to address those gaps to the Defense Acquisition Workforce Development Fund Steering Board.

♦ Have senior contracting leaders in the components participate in component processes/efforts to submit workforce changes in the President's Budget Exhibit PBR-23 for both the Program and Budget Review Submission and the President's Budget processes. Consider Contracting Competency Assessment results and other data, as appropriate.

♦ Have DPAP and senior contracting leaders in the components update the contracting human capital-planning section of the AT&L Human Capital Strategic Plan.

♦ Have DPAP and senior contracting leaders in the components develop/implement gap closure strategies/initiatives to address competency gaps such as recruiting, hiring, and retention initiatives and document them in the Contracting Human Capital Strategic Plan. Submit strategies/initiatives for consideration by the Defense Acquisition Workforce Development Fund Steering Board established under Section 852 of NDAA 2008.

Figure 3.   2009 Panel Actions related to Capable Contracting
Workforce Subcommittee. Source: DoD (2009).

In 2009, The Sufficient Contract Surveillance subcommittee addressed the actions in Figure 4. The subcommittee worked with DAU to develop learning objectives to incorporate into COR 222, the required training course for Type B and C certifications. DAU converted COR 222 into an online course for the purpose of developing a separate training course for CORs operating in contingency environments. The subcommittee determined that requiring CORs supervising Type A contracts to complete COR 222 would be an excessive requirement. Lastly, the subcommittee recommended the use of a DoD Instruction to Defense Components in order to require the components to plan and budget for forthcoming COR requirements.

Sufficient Contract Surveillance

♦ Have DAU, with support from the Defense components, evaluate current COR training (government and commercial).
♦ Develop a COR certification process.
♦ Develop an implementation plan for a COR certification process.

Figure 4.   2009 Panel Actions related to Sufficient Contract
Surveillance Subcommittee. Source: DoD (2009).

c.   2010 Actions

In 2010, the Sufficient Contract Surveillance subcommittee addressed the actions in Figure 5. The subcommittee authored what would become the Mach 29, 2010 USD(AT&L) Memo, "DoD Standards for Certification of Contracting Officer's Representatives (COR) for Service Acquisitions." This memo defined minimum COR competencies, training, and experience requirements and distributed them to Defense Components in the DoD (Carter, 2010). This information would be the basis for what

would become DoDI 5000.72, "DoD Standard for Contracting Officer's Representative Certification." Secondly, the subcommittee began its efforts to develop the COR Handbook based on a review of all current materials available to DoD CORs in order to create a "best of breed" resource for DoD CORs (DoD, 2010).

6. Sufficient Contract Surveillance
A. Develop a DoDI for the COR standard/certification
B. Develop a COR handbook

Figure 5.   2010 Panel Actions related to Sufficient Contract Surveillance Subcommittee. Source: DoD (2010).

d.   2011 Actions

In 2011, The Sufficient Contract Surveillance subcommittee addressed the actions in Figure 6. The subcommittee completed its efforts to develop the DoD COR Handbook. In addition, it developed the Combating Trafficking in Persons (CTIP) training, which was and is currently a requirement for CORs of all certification standards.

6. Sufficient Contract Surveillance
A. Publish DoD COR Handbook
B. Develop guidance to institutionalize "Combating Trafficking in Persons" in Quality Assurance Surveillance Plans
C. Review and recommend changes to regulations to improve contract surveillance

Figure 6.   2011 Panel Actions related to Sufficient Contract Surveillance Subcommittee. Source: DoD (2011).

e.   2012 Actions

In 2012, The Sufficient Contract Surveillance subcommittee addressed the actions in Figure 7. The subcommittee published the *DoD COR Handbook* to all Defense components and created guidelines to incorporate the objectives of CTIP training in Quality Assurance Surveillance Plans (QASP).

6. Sufficient Contract Surveillance
A. Develop guidance to institutionalize "Combating Trafficking in Persons" in Quality Assurance Surveillance Plans.
B. Review and recommend changes to regulations to improve contract surveillance.
C. Publish DoD COR Handbook.

Figure 7.   2012 Panel Actions related to Sufficient Contract
Surveillance Subcommittee. Source: DoD (2012)

f.   2014 Actions

This was the final year of reported activity for the Panel on Contracting Integrity. Its last action was to, as a whole, review and assess the requirements for each Contracting Career Field certification level. This action occurred due to a concern from the Panel over a lack of statutory requirements tying promotions in the contracting workforce with employees' level of certification and time spent in the field (DoD, 2014).

g.   Panel Dissolution

The majority of the work performed by the Panel concluded in 2011 with the development and distribution of the COR handbook and DoDI 5000.72. This is because the WSARA, put into place by President Obama, extended the Panel's existence. Per the WSARA, it was up to the SECDEF to determine when to dissolve the Panel. The 2014 report from the Panel is the most recent and final on the Panel's actions before it was dissolved by the SECDEF (DoD, 2014). The Panel never formally evaluated the effectiveness of the policies and training that were put into place as a result of its efforts.

In the next section, we will go into more detail on the competencies and certifications for CORs that were developed by the panel.

C.   COMPETENCIES AND CERTIFICATION FOR CORS

As was mentioned previously, FAC-COR and DoD COR programs use different competency models. Each of the competency models identifies three levels of certification to differentiate levels of experience and expertise required for the CORs overseeing contracts.

1. FAC-COR Competencies for Certification

FAC-COR uses Levels I, II, and III to identify its CORs, with Level I being the most junior and least trained CORs and Level III being the most senior and well-trained CORs. The competency models for FAC-COR are in Table 1. The standards were put in place when the FAI revised its standards (Denett, 2007) to the three-level model that it uses today (FAI, 2013). The revisions shifted the certification standards to better account for the level of complexity and risk associated with the kind of contract being monitored. Now, both time spent in the field performing COR-related activities as well as time spent in classroom environments training are requirements for achieving higher FAC-COR certification levels (FAI, 2013).

Table 1. FAC-COR Competency Model. Source: FAI (2018)

FAC-COR Requirements			
Requirements for:	**Level I**	**Level II**	**Level III**
Experience*	None	1 year of previous COR experience required	2 years of previous COR experience required
Training	8 hours of training	40 hours of training	60 hours of training
Appropriate for:	This level of COR is generally appropriate for low-risk contract vehicles, such as supply contracts and orders.	This level of COR is generally appropriate for contract vehicles of moderate to high complexity, including both supply and service contracts.	Level III CORs are the most experienced CORs within an agency and should be assigned to the most complex and mission critical contracts within the agency. These CORs are often called upon to perform significant program management activities and should be trained accordingly.

"* <u>Experience -</u> The requirements for experience are generally based upon the Contracting Officer's Representatives Qualifications. Experience may be time spent on the job in a Contracting Officer's Representative related job assignment, either in the private or public sector, which reflects the accumulation of knowledge, skills and abilities during years of progressively responsible work assignments." (FAI, 2018, Certification Requirements).

2. DoD COR Competencies and Certification

Unlike the FAI, The Panel instead created DoD COR certification standards of Type A, Type B, or Type C. These types were categorized by the specific cost model of the contract being monitored—respectively, Fixed-Price, Fixed Price with Incentives, or Cost Type contracts. Training required for DoD COR certification are not time based like FAC-COR but is specific DAU training and must be refreshed every three years (DoD, 2012). There are experience requirements for DoD CORs based on the certification type, but the requirements can be waived at any time. Any required competencies are up to the discretion of the supervisor and CO. The certification standard for Type A CORs is shown in Table 2, the certification standard for Type B CORs in Table 3, and the certification standard for Type C CORs in Table 4.

Table 2.   DoD Standard for Certification of DoD CORs – Type A.
Source: DoD (2012).

NATURE OF TYPE A: WORK OR REQUIREMENT	REQUIRED COMPETENCY TOPICS	REQUIRED COMPETENCIES	EXPERIENCE AND TRAINING REQUIREMENTS

Fixed-price contracts without incentives and low performance risk.
 	
Attributes of such requirements might include:
• Lack of technical or administrative complexity
• No identifiable risk factors
• Limited requirement for technical expertise
• Low likelihood of modification
• Effort is a follow-on to an existing contract
 	
COR responsibilities are generally limited to minimal technical and administrative contract surveillance.
	General:
	• Attention to detail
	• Decision making
	• Flexibility
	• Oral and written communication
	• Problem solving and reasoning
	• Self-management and initiative
	• Teamwork
	
	Technical:
	• Business ethics
	• Effective communication of contract requirements
	• Effective contract performance management
	• Effective COR performance
		On completion of mandatory training, the COR should be able to perform at least these competencies in a manner consistent with the nature of Type A work or requirements:
		
		• Assist in acquisition planning.
		• Assist in contract award process.
		• Establish and maintain a COR file with all required documentation.
		• Identify and prevent unethical conduct and instances of fraud, waste and abuse.
		• Perform technical and administrative contract surveillance and reporting responsibilities in accordance with the letter of designation and surveillance plan.
		• Recommend contract changes when necessary and monitor contract performance as modified.
		• Monitor contract expenditures and payments.
		• Monitor contract schedule compliance.
		• Perform liaison responsibilities between the contracting officer, the requiring activity, and the contractor for management of the contract.
		• Inspect and accept or reject deliverables during contract performance and at close-out in conformance with contract terms and conditions.
		• Monitor the control and disposition of U.S. Government furnished assets.
		• Perform surveillance in a contingency environment, when applicable.
			Experience:
			• Agency experience: Minimum of 6 months unless waived. The waiver must be addressed in the nomination package.
			• Relevant technical experience: As determined by the requiring activity and COR Management for the contracting officer's consideration.
			• General competencies: As determined by the nominating supervisor for the contracting officer's consideration.
			
			Training:
			• DAU course, "Contracting Officer's Representative with a Mission Focus" (online).
			• DAU course, "COR in a Contingency Environment," when applicable (classroom or online).
			• WAWF training (online).
			• DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Additional training mandated by the contracting activity or agency (e.g., security, etc.).
			
			Refresher Training:
			• Minimum of 8 hours COR specific training:
			  ○ Every 3 years, OR
			  ○ Before assuming COR responsibilities, if the individual has not served as a COR within the previous 24 months.
			• Annual DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Any additional training mandated by the contracting activity or agency.

Table 3.   DoD Standard for Certification of DoD CORs – Type B. Source: DoD (2012).

NATURE OF TYPE B: WORK OR REQUIREMENT	REQUIRED COMPETENCY TOPICS	REQUIRED COMPETENCIES	EXPERIENCE AND TRAINING REQUIREMENTS

Fixed-price contracts with incentives; fixed-price contracts with other than low performance risk; and other than fixed-price contracts. This includes everything other than Types A and C.
 	
Attributes of such requirements might include:
• Contract complexity or performance risk
• Effort will be performed in multiple regions or remote geographic locations
• The need for increased surveillance
• Magnitude of the requirement
• The contract contains incentive arrangements or cost sharing provisions
• The contract is cost-type of T&M or LH type, or FP LOE
 	
COR responsibilities are of increased complexity.
	General:
	• Attention to detail
	• Decision making
	• Flexibility
	• Influencing and persuasive interpersonal skills
	• Oral and written communication
	• Planning and evaluating
	• Problem solving
	• Reasoning
	• Self-management and initiative
	• Teamwork
	
	Technical:
	• Business ethics
	• Defining government requirements
	• Understanding and knowledge of contract type
	• Effective analytic skills
	• Effective communication of contract requirements
	• Effective contract performance management
	• Effective COR performance
	• Project management
	• Strategic planning
	• Understanding the marketplace
		On completion of mandatory training, the COR should be able to perform at least these competencies in a manner consistent with the nature of Type B work or requirements:
		• Assist in acquisition planning.
		• Assist in contract award process.
		• Establish and maintain COR file with all required documentation.
		• Identify and prevent unethical conduct and instances of fraud, waste and abuse.
		• Review technical deliverables and ensure compliance with Statement of Work or Statement of Objectives (e.g., perform technical monitoring and reporting in accordance with a quality assurance surveillance plan or other quality surveillance plan).
		• Perform administrative monitoring and reporting responsibilities (e.g., handle security issues, attend meetings, etc.).
		• Recommend contract changes when necessary and monitor contract performance as modified.
		• Monitor contract expenditures and payments.
		• Monitor contract schedule compliance.
		• Perform liaison responsibilities between the contracting officer and the contractor for management of the contract.
		• Inspect, and accept or reject deliverables during contract performance and at close-out in conformance with contract terms and conditions.
		• Review and validate that contractor payment requests are commensurate with performance.
		• Monitor control and disposition of U.S Government furnished assets.
		• Perform surveillance in a contingency environment, when applicable.
			Experience:
			• Agency experience: Minimum of 12 months unless waived. The waiver must be addressed in the nomination package.
			• Relevant technical experience: As determined by the requiring activity or COR management for the contracting officer's consideration.
			• General competencies: As determined by the nominating supervisor for the contracting officer's consideration.
			
			Training:
			• DAU course, "Contracting Officer's Representative" (classroom or on-line) or ALU-CL or equivalent course.
			• DAU course, "COR in a Contingency Environment," when applicable (classroom or online).
			• WAWF training (online).
			• DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Additional training mandated by the contracting activity or agency (e.g., security, etc.).
			
			Refresher Training:
			• Minimum of 16 hours COR specific training:
			  ○ Every 3 years, OR
			  ○ Before assuming COR responsibilities, if the individual has not served as a COR within the previous 24 months.
			• Annual DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Any additional training mandated by the contracting activity or agency.

Table 4.   DoD Standard for Certification of DoD CORs – Type C. Source: DoD (2012).

NATURE OF TYPE C: WORK OR REQUIREMENT	REQUIRED COMPETENCY TOPICS	REQUIRED COMPETENCIES	EXPERIENCE AND TRAINING REQUIREMENTS

Unique contract requirements that necessitate the COR have a higher education or specialized training beyond the Type B requirements.
 	
Attributes of such requirements might include:
• Environmental remediation
• Major weapons systems
• Medical or dental or veterinarian services, etc.
 	
COR responsibilities are of increased complexity.
	General:
	• Attention to detail
	• Decision making
	• Flexibility
	• Influencing and persuasive Interpersonal skills
	• Oral and written communication
	• Planning and evaluating
	• Problem solving
	• Reasoning
	• Self-management and initiative
	• Teamwork
	
	Technical:
	• Business ethics
	• Defining government requirements
	• Understanding and knowledge of contract type
	• Effective analytic skills
	• Effective communication of contract requirements
	• Effective contract performance management
	• Effective COR performance
	• Project management
	• Strategic planning
	• Understanding the marketplace
		On completion of mandatory training, COR should be able to perform at least these competencies in a manner consistent with the nature of Type C work or requirements:
		• Assist in acquisition planning.
		• Assist in contract award process.
		• Establish and maintain COR file with all required documentation.
		• Identify and prevent unethical conduct and instances of fraud, waste and abuse.
		• Review technical deliverables and ensure compliance with Statement of Work or Statement of Objectives (e.g., perform technical monitoring and reporting in accordance with a quality assurance surveillance plan or other quality surveillance plan).
		• Perform administrative monitoring and reporting responsibilities (e.g., handle security issues, attend meetings, etc.).
		• Recommend contract changes when necessary and monitor contract performance as modified.
		• Monitor contract expenditures.
		• Monitor contract schedule compliance.
		• Perform liaison responsibilities between the contracting officer and the contractor for management of the contract.
		• Inspect, accept or reject deliverables during contract performance and at close-out in conformance with contract terms and conditions.
		• Review and validate that contractor payment requests are commensurate with performance.
		• Monitor and control disposition of government furnished assets.
		• Perform surveillance in a contingency environment, when applicable.
		• Other specific functions consistent with the objectives of the activity's mandatory specialized or technical training.
			Experience:
			• Agency experience: Minimum of 12 months unless waived. The waiver must be addressed in nomination package.
			• Relevant technical experience: As determined by the requiring activity or COR management for the contracting officer's consideration.
			• General competencies: As determined by the nominating supervisor for the contracting officer's consideration.
			
			Training:
			• DAU course, "Contracting Officer's Representative" (classroom or on-line) or ALU-CL or equivalent course.
			• DAU course "COR in a Contingency Environment," when applicable (classroom or online).
			• WAWF training (online).
			• DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Additional training mandated by the contracting activity or agency (e.g., security, etc.).
			
			Refresher Training:
			• Minimum of 16 hours COR specific training:
			  ○ Every 3 years, OR
			  ○ Before assuming COR responsibilities, if the individual has not served as a COR within the previous 24 months.
			• Annual DoD Component provided ethics (designated OGE Form 450 filers only) & CTIP training.
			• Any additional training mandated by the contracting activity or agency.
			• Any necessary for maintenance of license or certification, etc.

3.   Differences between the Models

While both models were implemented to improve oversight of contract performance and are based on the potential for risk related to the contract, several key differences exist in the approaches to FAC-COR and DoD COR certification standards:

1.   FAC-COR has a mandatory field experience requirement for its certification levels, from a minimum of zero to a maximum of two years, whereas DoD CORs have field experience requirements of six to twelve months that can be waived.

2.   Training material is not specified for FAC-COR and is to be determined by the agency (Gordon 2011). DoD COR training is pre-specified uniform DAU training and additional training requirements can be added at the agency's discretion.

3.   FAC-COR must complete their refresher training every two years. Only 8 hours of Continuous Learning Points (CLPs) are needed for Level I, but Levels II & III require 40 CLPs. DoD CORs are required to gain 8 CLPs for Type A certification and only 16 CLP hours for Type B or Type C.

4.   DoD CORs are required to annually file a Confidential Financial Disclosure Report - Office of Government Ethics Form 450 (OGE-450) pursuant to ethical training standards (Ethics in Government Act, 1978). There are no ethical standards or training associated with FAC-COR certifications.

5.   DoD CORs have many fewer required competencies compared to FAC-COR. DoD CORs have 12 professional and technical performance outcomes, called competencies, required for Type A contracts and 14 competencies for Types B & C (DoD 2012). FAC-COR has 42 competencies for Level I, 51 competencies for Level II, and 54 competencies for Level III (FAI, 2013), which are categorized under 12 overarching competency units.

While there is a potential for differences in performance of contract oversight based on the differences in standards between DoD and non-DoD CORs, there has been no direct comparison between the two groups to date. The purpose of this research is therefore to analyze and measure the effectiveness of the uniform guidance for identification, development, certification, and management of COR's within the DoD in comparison to FAC-COR and identify areas to leverage as lessons learned and best practices. In order to do so, the research team utilized responses from the 2016 FAI AWCS and applied the same survey to members of the DoN Acquisition workforce. Background information on this survey can be found in the next section.

D.   FAI ACQUISITION WORKFORCE COMPETENCY SURVEY (AWCS) REPORT

When established in 1976, the FAI was charged with the responsibility of developing the human capital of the federal government (OFPP, 1976). Its mission statement is "To foster a high-performing, qualified civilian acquisition workforce" (FAI, 2018). One effort in pursuit of this mission was a survey released in 2016 to its civilian acquisition workforce for the workforce to perform a "self-test" for both competence in and time spent on COR responsibilities. The AWCS survey was designed to meet the following objectives:

- Identify the strengths and priority training needs of the Federal civilian (i.e., non-Department of Defense, or non-DoD) acquisition workforce;

- Improve acquisition human capital planning; and

- Gauge the developmental progress of the acquisition community in targeted areas. (FAI, 2016, p. 3)

The survey was administered online and advertised through both mass email notification and direct communication to acquisition workforce leaders (Chief Acquisition Officers, Senior Procurement Executives, etc.) for dissemination to their staff, resulting in almost 14,000 responses. When the data was finalized, the FY16 AWCS report findings

were briefed to the FAI Board of Directors and FAI Functional Advisory Boards beneath them (FAI, 2016).

The final report showed that out of all areas in the FAI acquisition workforce, FAC-COR competencies had the lowest proficiency rating on average (FAI, 2016). This report also showed that the FAC-COR workforce had the lowest average certification level for their field. These findings indicate that the acquisition personnel most crucial to proper oversight of contracts are the least prepared to succeed. It is possible that similar issues are present within the DoD given the lack of any such survey or analysis of the DoD acquisition workforce. While the efforts of the DoD Contract Integrity Panel resulted in additional resources such as the COR handbook for DoD CORs, there have been no efforts to determine how effective these resources and training are for the CORs who use them. Therefore, the research team believes an examination of the current competencies and efforts of DoD CORs, identical to the AWCS survey performed by FAI, is necessary.

THIS PAGE INTENTIONALLY LEFT BLANK

III. DOD COR COMPETENCIES SURVEY METHODOLOGY AND DESIGN

A. INTRODUCTION

The previous chapter provided an overview of the roles and responsibilities and competency requirements for DoD CORs and FAC-COR. It described the Contracting Integrity Panel's formation, responsibilities, and the resulting actions that came from its recommendations for improving the performance of CORs in federal acquisitions. A synopsis of the FAI FY16 AWCS survey and report was also provided. Understanding the similarities and differences of FAI and DoD CORs, and the Panels intended results the research team chose to utilize the FY16 AWCS survey to measure the outcomes of the Panels initiatives and compare them to FAC-CORs. This chapter presents the methodology used to design the research team's *DoD COR Competencies Survey* and its content, the Institutional Review Board (IRB) and personnel survey compliance process, and method of implementation and duration.

B. SURVEY DESIGN

The *DoD COR Competencies Survey* was designed to replicate the FY16 AWCS FAC-COR survey for a technical competency comparison between civilian FAC-CORs and DoD CORs. This section will discuss 1.) The scope of the *DoD COR Competencies Survey* in comparison to the FY16 AWCS survey report, and 2.) The content of the survey.

1. Scope and Comparison

The FY16 AWCS survey report separately collected competency proficiency data across three functional areas—contracting professionals, CORs, and Project and Program Managers—as well as their demographic (age, gender, education, and retirement eligibility) and occupational series information (i.e., 1102, 343, 1101) (FAI, 2016). An occupational series refers to a subdivision of an occupational group, such as accounting and budget, which relates to a specialized line of work and qualification (Office of Personnel Management [OPM], 2009). For the purposes of this research, important

occupational series titles, numbers, and descriptions from the *Handbook of Occupational Groups and Families* are as follows*:*

1102 – Contracting Series

This series includes positions that manage, supervise, perform, or develop policies and procedures for professional work involving the procurement of supplies, services, construction, or research and development using formal advertising or negotiation procedures; the evaluation of contract price proposals; and the administration or termination and close out of contracts. The work requires knowledge of the legislation, regulations, and methods used in contracting; and knowledge of business and industry practices, sources of supply, cost factors, and requirements characteristics.

0343 – Management and Program Analysis Series

This series covers positions that primarily serve as analysts and advisors to management on the evaluation of the effectiveness of government programs and operations or the productivity and efficiency of the management of Federal agencies or both. Positions in this series require knowledge of: the substantive nature of agency programs and activities; agency missions, policies, and objectives; management principles and processes; and the analytical and evaluative methods and techniques for assessing program development or execution and improving organizational effectiveness and efficiency. Some positions also require an understanding of basic budgetary and financial management principles and techniques as they relate to long range planning of programs and objectives. The work requires skill in: application of fact-finding and investigative techniques; oral and written communications; and development of presentations and reports.

0413 – Physiology Series

This series covers all classes of positions the duties of which are to advise on, administer, supervise, or perform research or other professional and scientific work in the field of human and animal physiology, including studies of the functions, environmental response, and biological activities and processes of the basic living organism and its component parts.

1360 – Oceanography Series

This series includes professional scientific positions engaged in the collection, measurement, analysis, evaluation and interpretation of natural and physical ocean phenomena, such as currents, circulations, waves, beach and near-shore processes, chemical structure and processes, physical and submarine features, depth, floor configuration, organic and inorganic sediments, sound and light transmission, color manifestations, heat

exchange, and similar phenomena (e.g., biota, weather, geological structure, etc.). Oceanographers plan, organize, conduct, and administer seagoing and land-based study and research of ocean phenomena for the purpose of interpreting, predicting, utilizing and controlling ocean forces and events. This work requires a fundamental background in chemistry, physics, and mathematics and appropriate knowledge in the field of oceanography.

1101 – General Business and Industry Series

This series covers all classes of positions the duties of which are to administer, supervise, or perform: (1) any combination of work characteristic of two or more series in this group where no one type of work is series controlling and where the combination is not specifically included in another series; or (2) other work properly classified in this group for which no other series has been provided.

0871 – Naval Architecture Series

This series covers positions managing, supervising, leading, and/or performing professional architectural, engineering, and scientific work relating to: the form, strength, stability, performance, and operational characteristics of marine structures and waterborne vessels; and all types of naval crafts and ships operating on, below, and just above the sea surface.

0180 – Psychology Series

This series covers positions involving professional work relating to the behavior, capacities, traits, interests and activities of human and animal organisms. This work may involve any one or a combination of the following functions: (1) experimenting with or systematically observing organisms to develop scientific principles or laws concerning the relationship of behavior to factors of environment, experience, or physiology, or to develop practical applications of findings; (2) applying professional knowledge of psychological principles, theories, methods, or data to practical situations and problems; and (3) providing consultative services or training in psycho-logical principles, theories, methods, and techniques to advance knowledge of them and their appropriate use.

– General Engineering Series

This series covers positions managing, supervising, leading, and/or performing professional engineering and scientific work. This series is applicable when the work of the position:

- requires knowledge and skills in two or more professional engineering series within the Engineering and Architecture Group, 0800, and no one discipline is paramount; or is consistent with engineering work in this

occupational group, but is not covered by an established series in this JFS. (OPM, 2009, p. 18-120)

The FY16 AWCS also collected information related to supervisor's perception of acquisition-related employees. As discussed in the previous chapter, the three major objectives of the FY16 AWCS was, "to identify the strengths and prioritize training needs of the Federal civilian acquisition workforce, improve acquisition human planning, and gauge the developmental progress of the acquisition community in targeted areas." (FAI, 2016, pg. 3).

As mentioned in Chapter I, the research team's literature searches discovered FAI collects a myriad of data through periodic surveys from individual employees to evaluate and measure the effectiveness of training and career development programs, including COR competencies and performance outcomes. As such, the research team concluded the type and manner of data collected and analyzed by FAI in the FY16 AWCS was analogous to and an effective means to answer our primary and secondary research questions: 1) How do DoD COR standards and proficiencies compare to non-DoD COR standards and proficiencies? 2) What are the lessons learned/best practices the DoD can leverage from FAC-COR, if any?

The research team replicated the FY16 AWCS survey questions from the FAC-COR functional area only, not including demographic information or perception of supervisors who oversee acquisition-related employees. However, in contrast to the FY16 AWCS, which administered functional area questions based on a respondents' identification with one of the three FAC functional areas, our *DoD COR Competencies Survey* solicited participation from all DoN acquisition personnel, civilian and military, akin to the three FAC functional areas, as to maximize objective opinion of DoD CORs.

2.   Content

The *DoD COR Competencies Survey* was designed with the use of max.gov, which is a government-approved online survey tool. The initial page informs respondents that participation in the survey is anonymous. The first series of questions in the survey asked respondents to identify as either a warranted CO, 1102 series Contracting Professional

without a warrant, or as a COR on a DoD Contract. A CO's warrant is a certificate of appointment on a standard form 1402 that states the scope, limitation, and term of the CO's authority and indicates obtainment of minimum requirements for education, training, and experience (FAR, 2016). Respondents were able to answer "Yes," 'No," or "No answer". If the respondent identified as a COR on a DoD Contract, they were asked to identify their professional series as "0343", "2210", "1101", "other", or "no answer". All respondents were then asked to rate DoD CORs on a set of 12 technical competencies and associated performance outcomes maintained by FAI based on a five-point proficiency scale and a three-point time spent scale. If the respondent was a COR themselves, they were required to base their answers on their own understandings. A Contract Specialist or CO was required to provide a response based on their personal experience of working with CORs. As stated in the FY16 AWCS, "Performance outcomes align with a specific competency and represent actions or behaviors that are exhibited when performing activities related to the competency" (FAI, 2016, pg. 32). Considering some competencies are more critical than others in certain situations, as well as from agency to agency, the time-spent scale indicates the criticality or weight of the proficiency in any given competency. Table 5 below shows all 12 FAC-COR competency units that were utilized in the survey and the respective performance outcomes associated with them.

Table 5.   Competencies and Performance Outcomes. Adapted from
OFPP/FAI (2016).

1. Effective Inspection & Acceptance
Inspect and accept deliveries and services by inspecting deliverables and monitoring services for conformance with contract/order/agreement terms and conditions, and accept or reject them.
Ensure compliance and completion by the Contractor of all required operations, including the preparation of any forms (e.g., Material Inspection and Receiving Reports) or equivalent, which shall be authenticated and certified by the COR that the services/supplies have been received and are acceptable.
Process inspection report as supporting documentation for payment and maintain documentation of all inspections performed, including disposition of the results. Ensure that invoice properly aligns with delivered services and products received and accepted.

2. Business Acumen and Communication Skill Sets
Monitor schedule and delivery processes.
Manage effective business partnership with the Contracting Officer, agency and other business advisers, and program participants.
Manage stakeholder relationships that generate buy-in to the business and technical management approach to the program.
Participate and/or contribute to the formulation of objectives and priorities, and where appropriate, implement plans consistent with the long-term interests of the organization in a global environment.
Risk Management: identify, mitigate, and advise against potential risks.
3. Contract Quality Assurance & Evaluation
Monitor the products or services throughout their life cycle.
Ensure consistency of appropriate quality requirements as they relate to the contract and validate/verify adherence specified requirements through test and measurement activities.
Influence knowledge management practices (e.g., continuous process improvement).
4. Contract Reporting
Monitor Contractor's performance.
Accept or reject an invoice for a given task or deliverable in accordance with the Prompt Payment Act.
Develop the COR file in accordance with agency requirements.
5. Proposal Evaluation
Ethics: Ability to demonstrate ethical conduct during the procurement process.
Documentation: -Ability to clearly document reasoning behind proposed evaluation.
Evaluating Non-Price Factors: Apply non-price factors in evaluating quotations, proposals, and past performance.
6. Contract Administration Management
Contract Administration Planning and Orientations: Define the COR roles and responsibilities by knowing the terms and conditions to which they are assigned, and participate in post- award orientation meetings to review contract milestones and responsibilities.
Requests for Contract Modification and Adjustment: Provide appropriate documentation in support of contract modification or adjustments to the CO.
Work Order Management: Submit work package to request work under the contract.
Financial Analysis and Reporting: Track the indexes as well as the appropriate burn rate for a given contract.

7. Defining Government Requirements
Writing Statements of Work: Create statements of work, Statement of Objectives (SOOs), and other related documents.
Conducting Needs Analysis and Preparing Requirements Documents: Perform an analysis, based on standard methodology, to identify all requirements and obligations in order to assist in the development of requirements documents.
Pricing Information from Offerors: If requested by the CO, assist in determining what pricing information to require from offerors.
Assisting in the Development of Acquisition Strategy: Assist the CO with the development of an appropriate acquisition strategy.
8. Contract Closeout
Recommend the appropriate rating criteria for the Contractor's performance evaluation within the agency past performance system.
Identify condition for final payment to the Contractor.
Identify the conditions under which a COR's duties and responsibilities end for a specific contract.
Identify the appropriate program file completion requirements.
Given a contract type, identify the FAR regulations, agency supplemental requirements as appropriate, and steps associated with closeout. Distinguish between physical contract completion and administrative contract closeout.
9. Market Research (Understanding the Marketplace)
Technology: Understanding available sources of information (e.g., internet, spreadsheets) to efficiently conduct sufficient market research.
Conduct, collect, and apply market-based research to understand the marketplace/requirements to identify the sources for a supply or service, the terms and conditions under which those goods/services are sold to the general public, and assist the CO on the best way to meet the need.
Conflict of Interest: Identifying potential conflicts of interest.
Gather all information related to the potential sources of an acquisition, as well as for commercial items, the terms and conditions under which the sources sell the goods and/or services involved.
Industry Trends: Understand the industry environment and determine availability of sources of supply and/or services.
Warranties: Support the Contracting Officer in determining whether a warranty is appropriate for a specific acquisition, including nature and use of the supplies or services, the cost of applying a warranty, and any issues with administration and enforcement.
10. Contract Negotiation
Determining Capability: Assist in determining and documenting the capability of a firm to effectively perform the terms and conditions of the contract.

10. Contract Negotiation
Negotiation Strategy: Assist CO in preparing a negotiation strategy that will permit negotiators to maximize the Government's ability to obtain best value.
Conducting Discussions/Negotiations: Assist CO in preparing for a negotiation session.
11. Effective Pre-Award Communication
Pre-Quote/Pre-Bid/Pre-Proposal Conferences: Assist with the pre-quote, pre-bid, or pre-proposal conference when appropriate, and maintain an accurate record of the meeting.
Solicitation Preparation: Assist in the preparation of a written solicitation, providing guidance as needed in the selection of the appropriate provisions and clauses for the requirement.
Amending/Canceling Solicitations: Provide input into the amendment or cancellation of a solicitation when it is in the best interest of the Government and/or agency.
Publicizing Proposed Acquisitions: Recommend to CO additional methods of publicizing the proposed procurement when appropriate.
Subcontracting Requirements: Recommend appropriate requirements be put into solicitations for subcontracting or make-or-buy situations.
12. Acquisition Planning
Strategic Planning: Advise customers on their acquisition- related roles and acquisition strategies needed to assure that supplies and services are available to meet mission requirements.
Task and Delivery Order Contracting: Suggest possible ordering vehicles to the CO in order to assist in determining the appropriate vehicles and submitting work package to request work under the contract.
Methods of Payment: Assist in the selection of the most appropriate method of payment that will best minimize the Government's overhead.
Recurring Requirements: Assist in determining whether and how to provide for recurring requirements.
Documenting the Source: Assist in determining whether a written source selection plan is necessary, and, if so, properly documenting the source selection planning or acquisition strategy.
Contract Type: Assist in determining appropriate contract type(s).
Compliance to FAR Guidelines: Assist the CO with compliance of applicable FAR guidelines when acquiring products and services.
Determining Need for Earned Value Management (EVM): Mitigate potential problems with cost, schedule, and technical risks.
Contract Financing: Assist in determining whether to provide for Government financing, and, where necessary, the method of financing to use.
Unpriced Contracts: Assist in the preparation of unpriced orders and contracts.

The proficiency and time spent scales can be seen below which were adapted from the FY16 AWCS. (OFPP/FAI, 2016, p. 6-7)

Table 6.   FY16 AWCS Proficiency Scale. Adapted from OFPP/FAI (2016).

Proficiency Scale
None (0): I do not possess proficiency in this competency/skill.
Basic (1): I am capable of handling the simplest of assignments related to this competency/skill but need significant assistance beyond the easiest solutions.
Foundational (2): I am capable of handling some assignments involving this competency/skill but need assistance beyond routine situations.
Intermediate (3): I am capable of handling many day-to-day assignments involving this competency/skill buy may seek assistance in difficult or new situations.
Advanced (4): I am capable of handling most day-to-day assignments involving this competency/skill though may seek expert assistance with particularly difficult or unique situations.
Expert (5): I am capable of handling all assignments involving this competency/skill and may serve as a role model and/or coach for others.

Table 7.   FY16 AWCS Time Scale. Adapted from OFPP/FAI (2016).

Time Spent Scale
N/A: This competency/skill is not relevant for my current position.
Minimal (1): I spend very little time on this competency/skill in my normal work activities.
Moderate (2): I spend a fair amount of time on this competency/skill in my normal work activities.
Extensive (3): I spend a large portion of my time on this competency/skill in my normal work activities.

C.   IRB AND PERSONNEL SURVEY COMPLIANCE PROCESS

1.   IRB Compliance Process

The research team completed an IRB Student Research Checklist as required in writing the research plan. Table 8 shows six activities presented in the Checklist, allowing a "yes" or "no" answer to each activity.

Table 8.   IRB Student Research Checklist Activities. Adapted from NPS (2019).

Administer a questionnaire or survey.
Conduct focus groups or interviews.
Observe human performance behavior or activity, directly or indirectly (e.g., online, through analysis of information systems, crowd sourcing, etc.) with or without individuals' knowledge.
Record human performance behavior or activity using audio, video, or digital recording methods.
Use pre-collected data that contains any information about individuals and that is not available to the general public (i.e., cannot be obtained via a Google search).
Perform hardware and/or software tests that include representative users in the testing process.

The research team answered "yes" to the first activity. Consequently, the research team was required to submit a Human Subjects Research (HSR) Determination Request Form to the NPS IRB, in accordance with the Naval Postgraduate School Instruction 3900.4A: Human Research Protection Program (NAVPGSOLINST 3900.4A), which contained the approved research proposal and a copy of the survey questions. According to NPS's Research Compliance website, IRB roles, responsibilities and authorities include but are not limited to:

- Recommend approval, require modifications to secure approval, table or defer review or disapprove human subject research.

- Take any action necessary to protect the rights and welfare of human subjects.

- Suspend or terminate human subject research that has been associated with unexpected serious harm to subjects or in in non-compliance with human research protection policy.

- Conduct prospective and continuing review of human subject research.

- Conduct prospective review and approval of changes to previously approved research.

- Reviews all audit findings or other reports (e.g. medical monitor reports) related human subject research. (NPS, 2019, About the NPS IRB)

A determination of "Not Human Subjects Research" was provided by the NPS IRB Chair on 30 August 2018 for Navy Personnel only. The NPS IRB Chair furnished a copy of the determination to the USMC Human Research Protection Official (HRPO), which provided approval on 12 September 2018 for USMC personnel only. According to DFARS 252.235-7004 "Protection of Human Subjects", which implements Title 48 of 32 Code of Federal Regulations (CFR) Subpart 219 (32 CFR 219), HRPO means "the individual designated by the head of the applicable DoD component and identified in the component's Human Research Protection Management Plan as the official who is responsible for the oversight and execution of the requirements of this clause, although some DoD components may use a different title for this position." According to the NPS IRB \chair and USMC HRPO, approval of our potential respondent population was limited to DoN personnel only unless extensive cross-service HSR approvals were obtained. Due to the potential for extensive time delays, the research team chose not to pursue additional HSR approvals with the Army, Air Force, and other DoD agencies for additional survey respondents.

2. Personnel Survey Compliance Process

After retrieving all applicable HSR approvals, the research team contacted the Navy Survey Office (NSO) and the United States Marine Corps (USMC) Survey Office for approval to administer the COR Competencies Survey in accordance with Office of the Chief of Naval Operations (OPNAV) Instruction 5300.8C, "Coordination and Control of Personnel Surveys" (DoN, 2008). This instruction is also applicable to USMC surveys. All Navy military and civilian personnel surveys must be reviewed and approved by the Navy and USMC Survey Program Offices. The objective of this instruction and respective survey offices is to ensure DoN personnel surveys provide maximum benefit to the largest number of Navy users at the lowest possible cost and with the least disruption to the Operational Tempo (OPTEMPO) of the fleet. Accordingly, the research team prepared an endorsement

letter and cost analysis on an OPNAV 5214/10 form to be reviewed and signed by a Navy Flag Officer or Senior Executive. The USMC Survey Office did not require an endorsement or cost analysis for review on the survey questions and HSR determination. The cost analysis was reviewed, and the endorsement letter was signed by the Director of Contracts and Grants at the Office of Naval Research on 20 September 2018, after which time the research team submitted the survey and all supporting documentation to the NSO for approval. NSO approval was granted on 24 September 2018 and the USMC Survey Office approval was granted on 13 September 2018. The approvals were limited to intra DoN personnel (Navy and USMC) only.

D.   METHOD OF IMPLEMENTATION AND DURATION

The previous section, IRB and Personnel Survey Compliance Process, discussed the requisite compliance requirements and how the research team satisfied those requirements to employ the COR Competencies Survey. This section discusses the methodology used to reach and solicit respondent participation and the duration of the survey.

1.   Implementation

The NSO is staffed by Research Psychologists, Sociologists, and Analysts to assist with survey design, data collection, and statistical analysis. As such, the research team utilized NSO expertise to load the survey content into max.gov, which has been approved for the collection of data from Navy personnel in accordance with DoD and Navy information management and control regulations. The NSO provided a link to the COR Competencies Survey within max.gov. Each research team member utilized personal and professional contacts within the DoN to solicit participation in the survey. The primary method utilized to accomplish this was via emailing the link to potential DoN respondents. Potential participants targeted include Navy and USMC personnel that were known 1102 warranted CO, 1102 contract specialists, and CORs. The team also solicited participation from Navy and USMC program and contract management personnel that routinely interact with the above-mentioned contract and COR personnel as a regular and routine part of their duties, but do not specifically identify as an 1102 or COR. Those individuals or groups of

individuals that were solicited to participate in the survey were also requested by the research team member to forward the request to other DoN personnel for participation.

2. Duration

The survey was designed to be issued once with an indefinite end date or time until the research team determined a sufficient number of completed responses were attained. The research team established a minimum of 32 completed surveys in order have sufficient statistical confidence in the analysis (Corder & Foreman, 2009). This large of a sample size would allow for both parametric as well as nonparametric tests to be performed on the data (Salkind, 2004) The survey was open in max.gov from 27 September 2018 to 3 December 2018, by which point 41 total completed surveys had been submitted.

E. CONCLUSION

This chapter presented the methodology used to design the research team's *DoD COR Competencies Survey* and its content, the IRB and personnel survey compliance process, and method of implementation and duration. Chapter IV presents an initial analysis of the data obtained from the survey. Chapter IV also presents 1) an analysis of technical competencies, which examines the strengths and opportunities for improvement across the functional area's competencies, and 2) a performance outcomes analysis, which examines the proficiency ratings across the functional areas in comparison to FAC-CORs.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. DOD COR COMPETENCY SURVEY RESULTS

The previous chapter, *DoD COR Competencies Survey* Methodology and Design, provided an overview of the research team's process of developing and obtaining the necessary information for this research. The chapter discussed the thought process behind the competencies included in the survey; the mechanics of the survey, including the timeframe; the website used; and the distribution process. This chapter, Chapter IV, provides the data from the *DoD COR Competencies Survey* for the occupational demographics of the respondents and the results of their proficiency and time-spent assessments. This chapter then presents a comparative analysis of the DoD COR Competency Survey results relative to the FY16 ACWS results. Lastly, Chapter IV presents the key findings that informed the development of our research team's recommendation, found in Chapter V.

A. DOD COR COMPETENCY SURVEY

As indicated in Chapter III, we used the FY16 AWCS to generate a nearly identical survey specific to COR Competencies. The results from the DoD COR Competency Survey are as follows:

1. Survey Audience

The Survey received 41 responses. Of these responses, 12 respondents were COs, 11 were CORs, 10 were Contracting Specialists, and 8 did not identify their roles as contracting professionals. The research team thought it was important that the respondents consisted of not only CORs but also of COs who were able to provide honest feedback regarding their understanding of CORs' proficiencies, as the CORs are their eyes and ears for their contracts (DoD, 2012). Contracting Specialist responses provided input from individuals more involved in day-to-day actions with CORs and therefore could likely provide better feedback with regard to COR performance in those functions. The Occupational Series for our COR respondents are captured in Figure 8. Based on the series descriptions in Chapter III, the COR responses were largest for the series 0343 Program Management, 1101 General Business, and 0801 General Engineering. Responses from

these areas together represented 64% of the responses, note that 25% of responders did not identify their Occupational Series.

Occupational Series Legend
0413 -   Physiology
0343 -   Management and Program Analysis
0801 -   General Engineering
0180 -   Psychology
0871 -   Naval Architecture
1101 -   General Business and Industry
1360 -   Oceanography
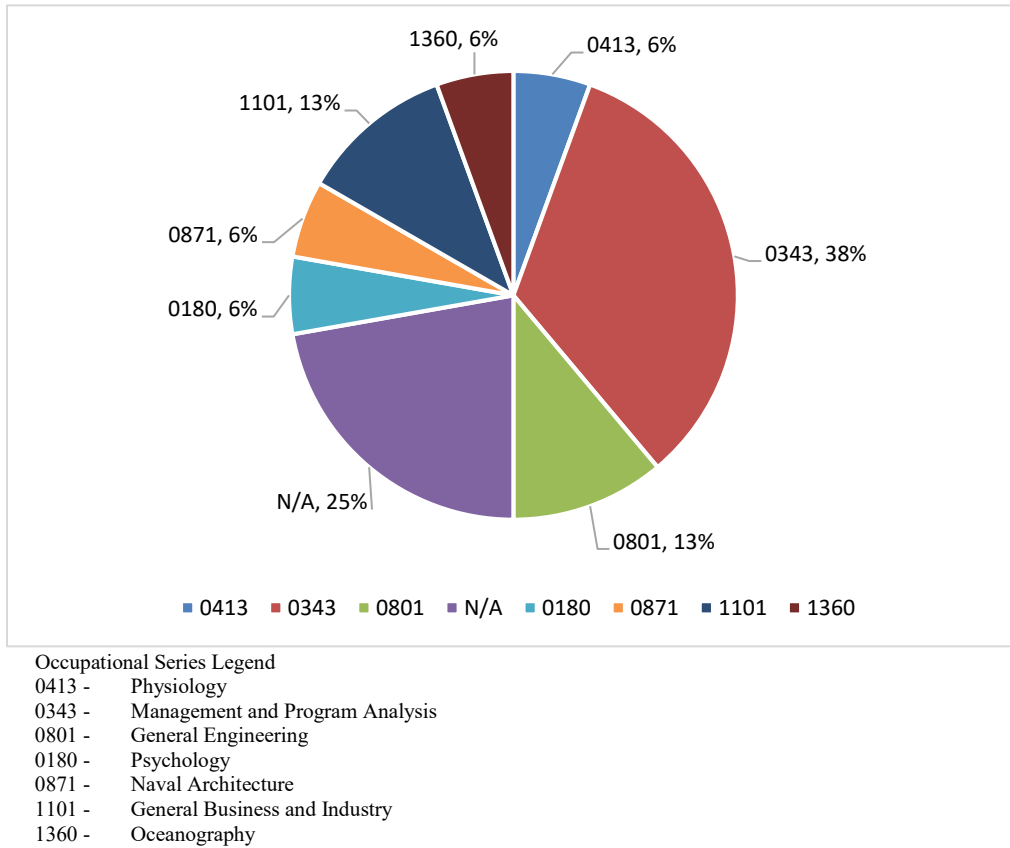
Figure 8.   DoD COR Sample by Occupational Series

2.   Proficiency Results

The survey participants assessed proficiency levels of CORs for each of the 12 technical competencies. The ratings used in this self-assessment are defined in Chapter III. Table 9 gives the average ratings of the 41 responses on the competency units of DoD CORs. Proficiency values that are one standard deviation, the measurement of how spread out a group of data is from its mean (Pierce, 2017), or more above (green) or below (red) the average proficiency across all competencies are indicated by these colors. The strongest competencies were related to Business Acumen and Communication Skill Sets, Contract Reporting, and Proposal Evaluation. The weakest responses were for the competencies

related to Acquisition Planning, Effective Pre-Award Communication, and Defining Government Requirements. This correlation of weaker proficiencies suggests that DoD CORs are least effective at performing pre-award functions and roles with the exception of evaluation functions.

Table 9.   DoD COR Competencies Average Proficiency Ratings

COR Competencies	DoD COR Proficiency
Effective Inspection & Acceptance	3.01
Business Acumen and Communication Skill Sets	3.13
Contract Quality Assurance & Evaluation	2.84
Contract Reporting	3.11
Proposal Evaluation	3.23
Contract Admin Management	2.82
Defining Government Requirements	2.24
Contract Closeout	2.46
Market Research	2.72
Contract Negotiation	2.39
Effective Pre-Award Communication	2.02
Acquisition Planning	1.89
Total Average	2.66

To provide better insight into the proficiency self-assessment, Figure 9 shows the distribution of the responses within the five-point scale. The horizontal bars represent the percentage of respondents who reported at a certain proficiency level. This view of the data allowed the team to assess which areas had the largest competency gaps, which would require improved focus on training for these areas by the DoD. The competencies with the largest number of responses of the highest rating, Expert (5), were related to Business Acumen and Communication Skill Sets, Contract Reporting, and Proposal Evaluation.

These competencies also had the highest levels of Advanced (4) or Expert (5) proficiency ratings responses, at 47%, 44%, and 45%, respectively. The competencies that reported the largest distributions of the highest rating were the same as the competencies that had the highest average rating.

The correlation of weakest proficiency responses suggests that DoD CORs lack necessary skills and experience associated with pre-award activities. The largest distribution of responses of the lowest rating, Basic (1), were for the competencies related to Acquisition Planning, Effective Pre-Award Communication, and Contract Quality Assurance & Evaluation. In each of those competencies, approximately one third of the total responses gave a rating of "Basic." The high rate of "Basic" responses for the competency unit Contract Quality Assurance & Evaluation demonstrates that, while the highest-rated competencies were related to post-award activities, there still are COR Competencies in great need in improvement for that phase of contracting.
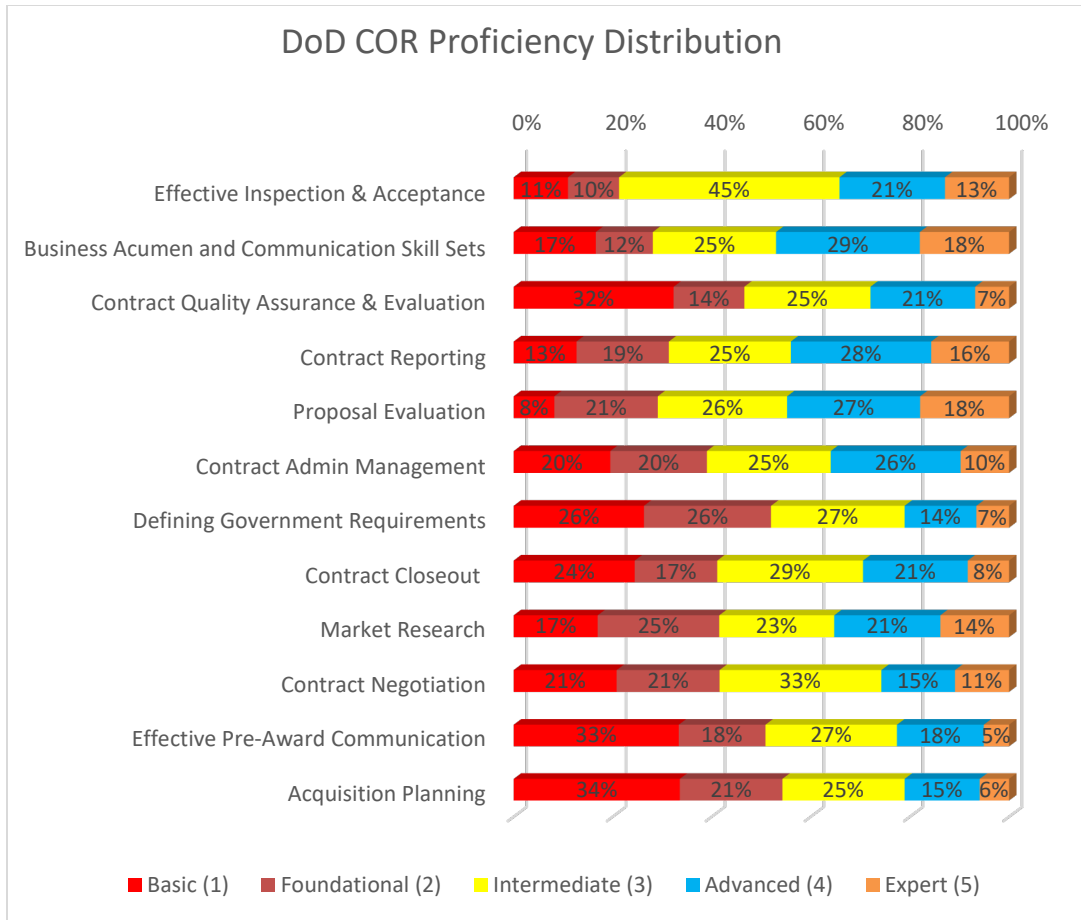
Figure 9.   DoD COR Competency Proficiency Ratings Distribution

3.   Time Results

Also assessed within the survey is the time spent associated with each competency, as detailed in Chapter III. Table 10 illustrates the average time spent, per competency, based on the assessments from the survey. Time Spent values that are one standard deviation or more above (green) or below (red) the average time spent across all competencies are indicated by their colors.

Table 10.   DoD COR Competencies Average Time Spent Ratings

DoD-COR Competencies	DoD-COR
	Time Spent
Effective Inspection & Acceptance	1.84
Business Acumen and Communication Skill Sets	1.83
Contract Quality Assurance & Evaluation	1.77
Contract Reporting	1.91
Proposal Evaluation	1.86
Contract Admin Management	1.75
Defining Government Requirements	1.58
Contract Closeout	1.59
Market Research	1.62
Contract Negotiation	1.41
Effective Pre-Award Communication	1.23
Acquisition Planning	1.17
Total Average	1.63

Based on the definitions detailed in Chapter III and the data in Table 10, it is evident that time is most spent performing duties related to the competencies for Business Acumen and Communication Skill Sets, Contract Reporting, Effective Inspection and Acceptance, and Proposal Evaluation. These competencies, where the most time is spent by DoD CORs, are the same competencies which have the highest-rated proficiencies. Although effective performance is essential for CORs in post-award functions (DoD, 2012), none of these competencies are pre-award specific where quality performance from CORs can lead to much more positive contracting outcomes for the DoD (McPhie, 2005).

The competencies with the least amount of time spent, as identified within Table 10, are Effective Pre-Award Communication and Acquisition Planning. These competencies are pre-award activities where DoD CORs also had the lowest-rated proficiencies. This result could be the source of potential contract oversight and

performance issues as more time spent on pre-award activities leads to a higher likelihood of positive contract performance (McPhie, 2005). Further analysis detailed in Section C of this chapter suggests that proficiency is low because less time is spent on these functions.

Now that the results of the DoD COR survey have been laid out in detail, the next section will provide a thorough comparison between the FY16 AWCS Survey and the DoD-COR Survey results.

B. COMPARATIVE ANALYSIS BETWEEN AWCS AND DOD SURVEY

A comparative analysis was conducted between the FY16 AWCS survey results and the *DoD COR Competencies Survey* results, in order to understand where the strengths and weaknesses of DoD CORs lie as well as where the DoD can enhance its performance utilizing best practices and procedures from the Non-DoD COR curriculum and practices. The 12 competency units being used in the FAC-COR survey are also the same competencies listed in the DoD COR Handbook as vital (DoD, 2012). The similar construction and medium of transmission of both surveys allows for a direct comparison between the two. Table 11 shows the average values for the responses on each competency and competency unit for the surveys. Any competency or competency unit that has a difference in proficiency means of 0.5 or greater are highlighted in green for the greater mean and red for the lesser mean.

Table 11.   DoD COR Survey and FY16 AWCS Proficiency and Time-Spent Response Means

Competency/Performance Outcome	FAC-COR		DOD COR	
	Proficiency	Time Spent	Proficiency	Time Spent
Effective Inspection & Acceptance	**3.07**	**1.75**	**3.01**	**1.84**
Inspect and accept deliveries and services by inspecting deliverables and monitoring services for conformance with contract/order/agreement terms and conditions, and accept or reject them.	3.13	1.76	3.16	1.82

Competency/Performance Outcome	FAC-COR		DOD COR	
	Proficiency	Time Spent	Proficiency	Time Spent
Ensure compliance and completion by the Contractor of all required operations, including the preparation of any forms (e.g., Material Inspection and Receiving Reports) or equivalent, which shall be authenticated and certified by the COR that the services/supplies have been received and are acceptable.	3.10	1.75	2.94	1.86
Process inspection report as supporting documentation for payment and maintain documentation of all inspections performed, including disposition of the results. Ensure that invoice properly aligns with delivered services and products received and accepted.	3.09	1.72	2.94	1.86
Business Acumen and Communication Skill Sets	**3.00**	**1.70**	**3.13**	**1.83**
Monitor schedule and delivery processes.	3.12	1.73	3.44	1.89
Manage effective business partnership with the Contracting Officer, agency and other business advisers, and program participants.	3.09	1.73	3.20	1.85
Manage stakeholder relationships that generate buy-in to the business and technical management approach to the program.	2.99	1.65	3.30	1.98
Participate and/or contribute to the formulation of objectives and priorities, and where appropriate, implement plans consistent with the long-term interests of the organization in a global environment.	2.96	1.63	3.07	1.84
Risk Management: identify, mitigate, and advise against potential risks.	2.92	1.60	2.67	1.60
Contract Quality Assurance & Evaluation	**2.93**	**1.66**	**2.84**	**1.77**
Monitor the products or services throughout their life cycle.	3.03	1.70	3.00	1.93

Competency/Performance Outcome	FAC-COR		DOD COR	
	Proficiency	Time Spent	Proficiency	Time Spent
Ensure consistency of appropriate quality requirements as they relate to the contract and validate/verify adherence specified requirements through test and measurement activities.	2.95	1.65	2.93	1.89
Influence knowledge management practices (e.g., continuous process improvement).	2.93	1.61	2.59	1.48
Contract Reporting	**2.92**	**1.66**	**3.11**	**1.91**
Monitor Contractor's performance.	3.16	1.80	3.30	2.31
Accept or reject an invoice for a given task or deliverable in accordance with the Prompt Payment Act.	3.16	1.70	3.04	1.76
Develop the COR file in accordance with agency requirements.	2.88	1.62	2.98	1.67
Proposal Evaluation	**2.85**	**1.56**	**3.23**	**1.86**
Ethics: Ability to demonstrate ethical conduct during the procurement process.	**3.11**	1.56	**3.69**	2.07
Documentation: -Ability to clearly document reasoning behind proposed evaluation.	2.90	1.55	3.02	1.84
Evaluating Non-Price Factors: Apply non-price factors in evaluating quotations, proposals, and past performance.	2.85	1.54	2.98	1.67
Contract Administration Management	**2.85**	**1.67**	**2.82**	**1.75**
Contract Administration Planning and Orientations: Define the COR roles and responsibilities by knowing the terms and conditions to which they are assigned, and participate in post- award orientation meetings to review contract milestones and responsibilities.	2.92	1.64	2.98	1.83

	FAC-COR		DOD COR	
Competency/Performance Outcome	**Proficiency**	**Time Spent**	**Proficiency**	**Time Spent**
Requests for Contract Modification and Adjustment: Provide appropriate documentation in support of contract modification or adjustments to the CO.	2.89	1.59	2.88	1.71
Work Order Management: Submit work package to request work under the contract.	2.85	1.59	2.74	1.71
Financial Analysis and Reporting: Track the indexes as well as the appropriate burn rate for a given contract.	2.81	1.59	2.67	1.76
Defining Government Requirements	**2.75**	**1.63**	**2.24**	**1.58**
Writing Statements of Work: Create statements of work, Statement of Objectives (SOOs), and other related documents.	2.93	1.70	2.47	1.59
Conducting Needs Analysis and Preparing Requirements Documents: Perform an analysis, based on standard methodology, to identify all requirements and obligations in order to assist in the development of requirements documents.	2.69	1.56	2.33	1.62
Pricing Information from Offerors: If requested by the CO, assist in determining what pricing information to require from offerors.	**2.63**	1.45	**2.02**	1.60
Assisting in the Development of Acquisition Strategy: Assist the CO with the development of an appropriate acquisition strategy.	2.54	1.44	2.15	1.52
Contract Closeout	**2.55**	**1.39**	**2.46**	**1.59**
Recommend the appropriate rating criteria for the Contractor's performance evaluation within the agency past performance system.	2.72	1.43	2.60	1.53
Identify condition for final payment to the Contractor.	2.70	1.40	2.54	1.68

	FAC-COR		DOD COR	
Competency/Performance Outcome	**Proficiency**	**Time Spent**	**Proficiency**	**Time Spent**
Identify the conditions under which a COR's duties and responsibilities end for a specific contract.	2.69	1.40	2.70	1.67
Identify the appropriate program file completion requirements.	2.56	1.38	2.50	1.69
Given a contract type, identify the FAR regulations, agency supplemental requirements as appropriate, and steps associated with closeout. Distinguish between physical contract completion and administrative contract closeout.	**2.53**	1.37	**1.95**	1.41
Market Research (Understanding the Marketplace)	**2.48**	**1.45**	**2.72**	**1.62**
Technology: Understanding available sources of information (e.g., internet, spreadsheets) to efficiently conduct sufficient market research.	**2.71**	1.46	**3.23**	1.88
Conduct, collect, and apply market-based research to understand the marketplace / requirements to identify the sources for a supply or service, the terms and conditions under which those goods/services are sold to the general public, and assist the CO on the best way to meet the need.	2.55	1.46	2.76	1.73
Conflict of Interest: Identifying potential conflicts of interest.	2.53	1.33	2.76	1.43
Gather all information related to the potential sources of an acquisition, as well as for commercial items, the terms and conditions under which the sources sell the goods and/or services involved.	2.51	1.44	2.72	1.64
Industry Trends: Understand the industry environment and determine availability of sources of supply and/or services.	**2.49**	1.42	**2.98**	1.83

Competency/Performance Outcome	FAC-COR		DOD COR	
	Proficiency	Time Spent	Proficiency	Time Spent
Warranties: Support the Contracting Officer in determining whether a warranty is appropriate for a specific acquisition, including nature and use of the supplies or services, the cost of applying a warranty, and any issues with administration and enforcement.	2.34	1.34	1.92	1.22
Contract Negotiation	**2.45**	**1.36**	**2.39**	**1.41**
Determining Capability: Assist in determining and documenting the capability of a firm to effectively perform the terms and conditions of the contract.	2.64	1.42	2.79	1.84
Negotiation Strategy: Assist CO in preparing a negotiation strategy that will permit negotiators to maximize the Government's ability to obtain best value.	2.50	1.36	2.21	1.24
Conducting Discussions/Negotiations: Assist CO in preparing for a negotiation session.	2.49	1.36	2.16	1.16
Effective Pre-Award Communication	**2.33**	**1.34**	**2.02**	**1.23**
Pre-Quote/Pre-Bid/Pre-Proposal Conferences: Assist with the pre-quote, pre-bid, or pre-proposal conference when appropriate, and maintain an accurate record of the meeting.	2.44	1.35	2.31	1.26
Solicitation Preparation: Assist in the preparation of a written solicitation, providing guidance as needed in the selection of the appropriate provisions and clauses for the requirement.	2.42	1.40	2.23	1.46
Amending/Canceling Solicitations: Provide input into the amendment or cancellation of a solicitation when it is in the best interest of the Government and/or agency.	2.35	1.30	2.00	1.26

	FAC-COR		DOD COR	
Competency/Performance Outcome	**Proficiency**	**Time Spent**	**Proficiency**	**Time Spent**
Publicizing Proposed Acquisitions: Recommend to CO additional methods of publicizing the proposed procurement when appropriate.	**2.26**	1.27	**1.74**	1.08
Subcontracting Requirements: Recommend appropriate requirements be put into solicitations for subcontracting or make-or-buy situations.	2.25	1.28	1.84	1.08
Acquisition Planning	**2.32**	**1.41**	**1.89**	**1.17**
Strategic Planning: Advise customers on their acquisition- related roles and acquisition strategies needed to assure that supplies and services are available to meet mission requirements.	2.51	1.48	2.56	1.54
Task and Delivery Order Contracting: Suggest possible ordering vehicles to the CO in order to assist in determining the appropriate vehicles and submitting work package to request work under the contract.	2.44	1.44	2.15	1.23
Methods of Payment: Assist in the selection of the most appropriate method of payment that will best minimize the Government's overhead.	**2.36**	1.34	**1.77**	1.00
Recurring Requirements: Assist in determining whether and how to provide for recurring requirements.	2.35	1.40	2.13	1.33
Documenting the Source: Assist in determining whether a written source selection plan is necessary, and, if so, properly documenting the source selection planning or acquisition strategy.	2.30	1.34	1.87	1.15
Contract Type: Assist in determining appropriate contract type(s).	2.28	1.32	2.08	1.16
Compliance to FAR Guidelines: Assist the CO with compliance of applicable FAR guidelines when acquiring products and services.	2.26	1.36	1.95	1.32

	FAC-COR		DOD COR	
Competency/Performance Outcome	**Proficiency**	**Time Spent**	**Proficiency**	**Time Spent**
Determining Need for Earned Value Management (EVM): Mitigate potential problems with cost, schedule, and technical risks.	**2.24**	1.35	**1.69**	1.09
Contract Financing: Assist in determining whether to provide for Government financing, and, where necessary, the method of financing to use.	**2.23**	1.35	**1.43**	0.94
Unpriced Contracts: Assist in the preparation of unpriced orders and contracts.	**2.15**	1.32	**1.25**	0.94

Based on the surveys, neither FAC-CORs nor DoD CORs significantly outperformed the other group as a whole. The team ran a one-way analysis of variance (ANOVA). This statistical test allows for a comparison of the means for each competency unit of both surveys, which confirms than neither group statistically outperformed the other (McCammon, 2018). Using an F-ratio value of 0.1246, which is the variation between the sample means divided by the variation within the samples, resulted in a p-value of 0.727, which describes the probability of obtaining the F value or greater while still assuming a null hypothesis (McCammon, 2018). Due to the p-value being greater than the confidence interval of 0.05, the null hypothesis was confirmed. Figure 10 offers a visual comparison of the means for each competency unit for DoD CORs and FAC-CORs.
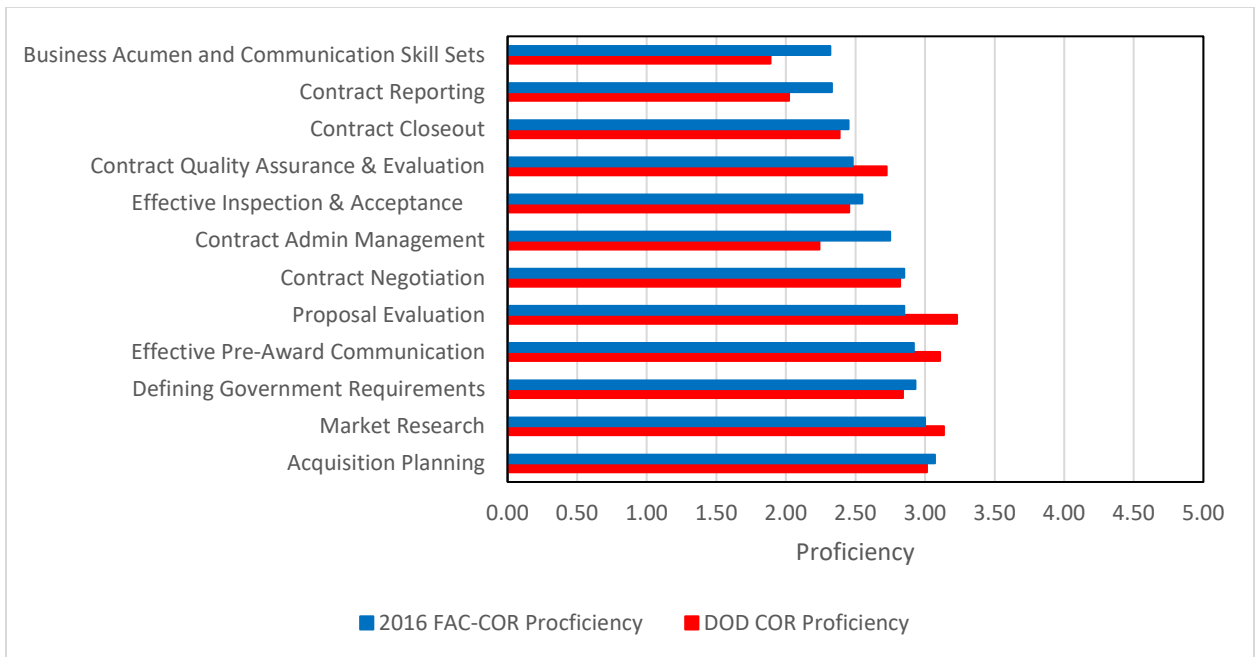
Figure 10.   DON versus FAC- COR Competency Unit Proficiency
Ratings

There are similarities in the proficiency ratings for many of the competencies, and, overall, there is no significant statistical difference between the groups. However, there were gaps in performance between the groups in certain areas. According to their proficiency responses, DoD CORs outperform FAC-CORs in fewer areas than FAC-CORs outperform DoD CORs. The competencies in which DoD CORs did outperform FAC-CORs were Ethics and certain Market Research techniques. The DoD CORs' high proficiency responses for Ethics is likely related to the positive changes that had been implemented in the DoD ethics program since the Panel was convened (Taylor, 2015). DoD CORs outperformed FAC-CORs in having a better understanding of available sources of market information and a better understanding of the current state of supply and demand with regard to the industry environment. An explanation for this result could be the fact that DoD industries have been consolidating, and most major players remaining in the market have been established for a considerable amount of time (Duggan, 2018).

There is a potential need to incorporate lessons learned and training techniques from FAC-CORs in these areas. While neither group outperformed the other as a whole,

FAC-CORs had notably higher proficiency responses in several areas. Defining Government Requirements was the only competency unit out of the 12 examined that had a significant difference in the responses between the two groups, with 2.75 for FAC-CORs and 2.24 for DoD CORs. Within that competency unit, the competencies related to writing statements of work and identifying relevant pricing information are the specific competencies that saw FAC-CORs outperform DoD CORs. There was a significant difference of the ratings, in favor of FAC-CORs, for competencies related to Acquisition Planning and Effective Pre-award Communication. These competencies were also the two lowest rated areas for DoD CORs overall and had the lowest ratings for time-spent on the activity. Therefore, there is potential to incorporate lessons learned and training techniques from FAC-CORs in these areas. There is also a potential that increasing the time spent on these activities would improve the proficiency rating for these competencies.

The final relationship that was examined by the team was the relationship between proficiency and time-spent on competencies. Figure 11 shows a comparison between those factors for DoD CORs. Figure 12 shows a comparison between those factors for FAC-CORs. This data demonstrates that there is a correlation between time spent on a competency and higher reported proficiencies for a given competency.
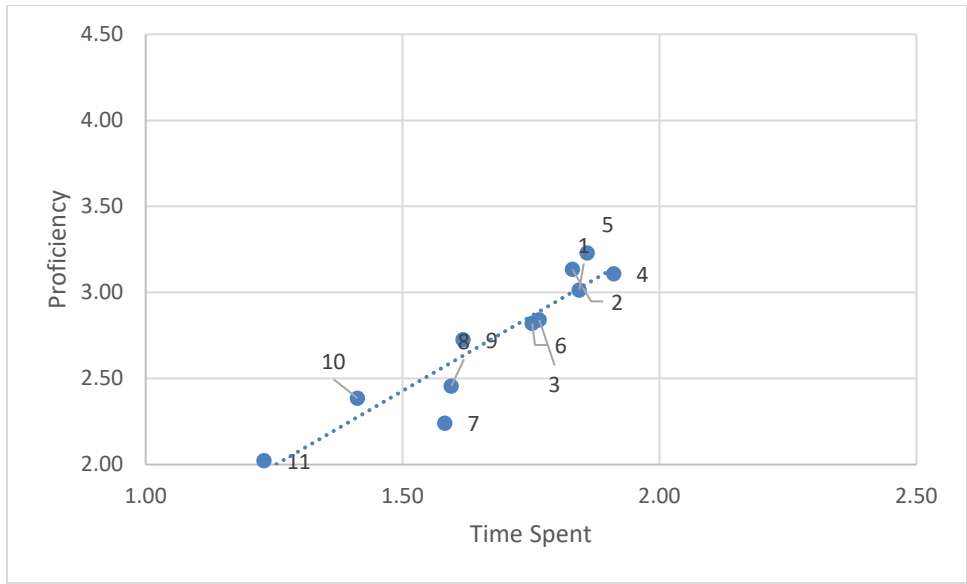
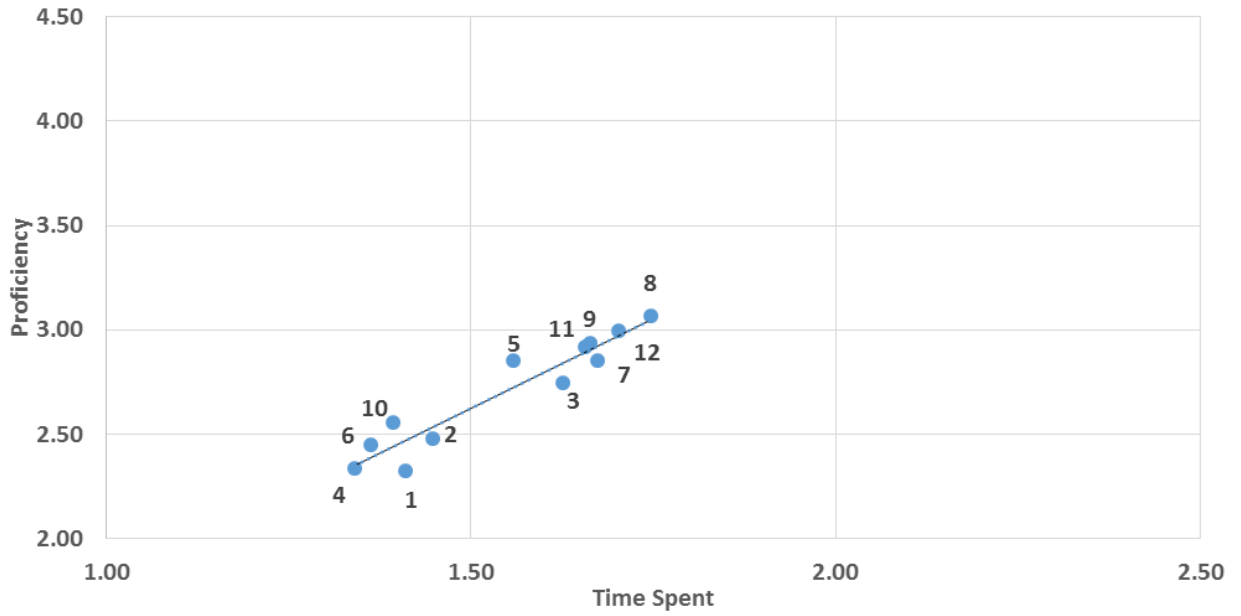Figure 11.   DoD COR Competency Proficiency and Time Spent Comparison

Figure 12.   FAC-COR Competency Proficiency and Time Spent Comparison

C.   CONCLUSION

This chapter presented the analysis of the DoD COR survey and the FAC-COR survey. The analysis included proficiency rating, time-spent ratings, and a comparison between the DoD COR Survey and the FY16 AWCS.

Overall, the data demonstrated that the DoD CORs possesses weaknesses and shortcomings regarding their performance of pre-award activities. However, one can assume that if the DoD CORs increase their time spent with pre-award activities, the knowledge and proficiencies will be enhanced, as the data demonstrates a strong correlation between the time spent on a competency and the proficiency level.

Through the comparative analysis between the DoD CORs and FAC-CORs, it became evident that there is no significant level of outperformance between the two groups; however, the FAC-CORs possess higher proficiencies in more competencies than the DoD CORs. The data suggests that the DoD CORs would greatly benefit from FAC-COR lessons learned and processes regarding defining Government Requirements and developing Statements of Works and Cost & Pricing data.

In closing, following the thorough analyses of DoD CORs and FAC-CORs, Chapter V will present the research team's recommendation.

V.   CONCLUSION AND RECOMMENDATIONS

The purpose of this research has been to conduct and document a thorough analysis of the proficiencies of DoD and non-DoD CORs in order to answer the primary and secondary research questions identified in Chapter I and as follows:

1.   How do DoD COR standards and proficiencies compare to non-DoD COR standards and proficiencies?; and

2.   What are the lessons learned/best practices the DoD can leverage from Federal Acquisition Certification for Contracting Officer's Representatives (FAC-COR), if any?

As Chapter I states, there is no formal differentiation between the roles and definition of DoD CORs and non-DoD CORs; however, there are differences within the COR certification programs. The Panel on Contracting Integrity was responsible for drafting and updating standards and processes for development, certification, and management of CORs within the DoD (DoD, 2007). In the eight years since those standards were implemented, a follow-up assessment of the effectiveness of the standards developed by the panel has not been conducted. However, during that same time period FAI has continued to assess the effectiveness of its program by conducting biannual surveys and analyzing the data obtained by the surveys. Chapter II provides a summary of the Panel's activities and begins to demonstrate the difference of the COR certification programs. For instance, FAC-COR uses Levels I, II, and III to identify its CORs, with Level I being the most junior and least trained CORs and Level III being the most senior and well-trained CORs. The DoD COR certification standards consist of Type A, Type B, or Type C, which are based on the contract types being monitored by the COR (DoD, 2012). Although there is a difference between the certification programs, Chapter II states that no direct comparison has been conducted to date.

 In order to conduct a comparison and analysis between the two groups, the research team deployed a survey similar to the FY16 AWCS survey. Chapter III provides the background and content of the FY16 AWCS survey; as well as, the process the research

team performed in order to replicate the FY16 AWCS to DoN CORs. The results of the DoD COR Survey, detailed in Chapter IV, illustrates no significant delta between the two groups. However, a noticeable difference between the groups was identified in the competency, "Defining Government Requirements," which FAC-CORs possess a notably higher proficiency. Also discussed in Chapter IV is the trend of time-spent on a competency resulting in a higher proficiency for DoD CORs. The positive correlation between time-spent on a competency and performance with a competency in DoD CORs, is a trend that consistently emerged in the results of each AWCS that has been conducted by FAI. Based on these findings, this chapter provides the answers to the primary and secondary research questions and includes areas for future research.

A.   CONCLUSION

The data provided in Chapter II, "Background," as well as the comparative analysis conducted in Chapter IV, "Results," indicate that the answer to the primary question— "How do DoD COR standards and proficiencies compare to FAC-COR standards and proficiencies?"—is as follows: FAC-COR certification standards are based on a COR's years of experience and hours spent in training (Gordon, 2011), whereas DoD COR certification standards are based on the complexity of the contract being monitored (Carter, 2010). As for the proficiencies, the results of the survey, laid out in Chapter IV, reveal that the proficiencies within the two groups are similar, with very few significant outliers. However, the results did determine that non-DoD CORS possess higher proficiencies in more competencies overall, such as in "Defining Government Requirements." The results also demonstrated a strong correlation, for both DoD and non-DoD CORs, between the time spent with a specific competency and the associated proficiency.

Likewise, the standards and proficiencies discussed in Chapter II and the comparative analysis conducted in Chapter IV provide an answer to the secondary research question: "What are the lessons learned/best practices the DoD can leverage from Federal Acquisition Certification for Contracting Officer's Representatives (FAC-COR), if any?" The findings suggest that, because the FAC-CORs demonstrate a higher proficiency in more competencies, it is advantageous for the DoD to adapt some of the FAC-COR

standards and trainings; which particular standards and trainings the research team recommends are discussed in the next and final section.

B. RECOMMENDATIONS

The responses to the DoD COR Competency Survey provided the research team with useful data in order to provide recommendations and areas of further study; however, the team is confident that by including all branches of the DoD in the distribution of the survey, a stronger analysis can be performed. Not only will this present a better picture of the difference between the FAC-CORs and DoD-CORs, but it will also show whether there is consistency across the DoD's COR competencies and proficiencies. If there are differences amongst the branches, the DoD can take lessons learned from specific agencies in order to improve specific competencies. Additionally, the specific branches can leverage various training material from other agencies that excel in specific areas.

Although the research did not reveal a statistically significant difference between the DoD-CORs and FAC-CORs, it is evident that there are areas the DoD can improve through coordination with FAC-CORs and FAI. One area in which the survey data showed that FAC-CORs exceeded the DoD CORs is "Defining Government Requirements". Because the FAC-CORs possess a notable difference in its proficiency regarding this competency, the DoD can conduct further research in understanding the training non-DoD CORs take regarding this competency. It is recommended that the DoD examine FAC-COR curriculum, training hours, topics in training, and the overall aspects of a FAC-COR. Should the DoD not wish to leverage standards and training curriculum from FAI, the research team recommends that the DoD use the results of this research to enhance its own curriculum within DAU to strengthen its training material. As the data shows a strong correlation between time spent and proficiencies, we believe the DoD could enhance its training curriculum for CORs with a strong focus in this competency. Training can be enhanced by including a curriculum with a focus on writing Statements of Work and other requirements documents. DoD CORs can also improve in "Defining Government Requirements" by attending workshops associated with writing Statements of Work or Performance Work Statements (PWS).

Another area where the DoD can improve, as demonstrated in the survey results, is in the competencies of "Effective Pre-award Communications" and "Acquisition Planning." The data from this research shows that the more personnel spend time on a specific area, the higher their proficiency. By enhancing the proficiencies associated with pre-award functions, the CORs will not only be able to support the acquisition community in requirements generation, but will likely provide stronger surveillance and have a greater understanding of the requirements.

Overall, the data did not demonstrate a significant difference in proficiencies between DoD and FAC-CORs, but because the results demonstrated a correlation between time spent and proficiencies, an opportunity for further research is to analyze time-spent data and enhance the DoD DAU curriculum and provide workshops for the competencies requiring more time-spent.

Ultimately, the most impactful way that the DoD can improve the proficiencies of the CORs is by having the Panel reconvene and further evaluate the effectiveness of the training, certification, and continued development of CORs within the DoD, originally produced in 2010, and make changes as necessary.

LIST OF REFERENCES

Carter, A.B. (2010). *DoD standard for certification of Contracting Officer's Representatives (COR) for Services Acquisitions*. Washington DC: Department of Defense. March 29, 2010

Corder, G. W., & Foreman, D. I. (2009). *Nonparametric statistics for non-statisticians: a step-by-step approach*. Hoboken, N.J.: Wiley & Sons.

Curtin, N.P. (2004) *Military Operations: DOD's extensive use of logistics support contracts requires strengthened oversight* (GAO-04-854). Washington, DC: Government Accountability Office.

Defense Federal Acquisition Regulation supplement (DFARS). 48 C.F.R. ch 2 (2014).

Denett, P. A. (November 26, 2007). *The federal acquisition certification for Contracting Officer Technical Representatives*. Washington, DC: Office of Management and Budget. Retrieved from https://www.fai.gov/sites/default/files/pdfss/11-26-COTR-Memo.pdf

Department of Defense. (2006) *Civilian human capital strategic plan 2006-2010*. Washington, DC: Office of the Undersecretary of Defense Acquisition, Technology, and Logistics. Retrieved from https://apps.dtic.mil/dtic/tr/fulltext/u2/a497258.pdf

Department of Defense. (2007) *Panel on Contracting Integrity 2007 report to Congress*. Washington, DC: Office of the Undersecretary of Defense Acquisition, Technology, and Logistics. Retrieved from https://www.acq.osd.mil/dpap/cpic/cp/docs/panel_on_contracting_integrity_2008 0107.pdf

Department of Defense. (2008) *Panel on Contracting Integrity 2008 report to Congress*. Washington, DC: Office of the Undersecretary of Defense Acquisition, Technology, and Logistics. Retrieved from https://www.acq.osd.mil/dpap/cpic/cp/docs/panel_on_contracting_integrity_2009 0108.pdf

Department of Defense. (2009) *Panel on Contracting Integrity 2009 report to Congress*. Washington, DC: Office of the Undersecretary of Defense Acquisition, Technology, and Logistics.   Retrieved from https://www.acq.osd.mil/dpap/cpic/cp/docs/Panel_on_Contracting_Integrity_2009 _to_Congress.pdf

Department of Defense. (2010) *Panel on Contracting Integrity 2010 report to Congress*.
Washington, DC: Office of the Undersecretary of Defense Acquisition,
Technology, and Logistics. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/docs/PCI_RTC_2010.pdf

Department of Defense. (2011) *Panel on Contracting Integrity 2011 report to Congress*.
Washington, DC: Office of the Undersecretary of Defense Acquisition,
Technology, and Logistics. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/docs/2011_Panel_Structure_and_Actions_
FINAL_ao_1-28-11.doc

Department of Defense. (2012) *DRAFT Panel on Contracting Integrity final report to
Congress*. Washington, DC: Office of the Undersecretary of Defense Acquisition,
Technology, and Logistics. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/docs/MASTER_DRAFT_FOR_PCI_Annu
al_Report_for_2011_ao_23_Aug_12.docx

Department of Defense. (2012) *Panel on Contracting Integrity 2012 report to Congress*.
Washington, DC: Office of the Undersecretary of Defense Acquisition,
Technology, and Logistics. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/docs/2012_Panel_Structure_and_Actions_(
9_FEB_12).doc

Department of Defense. (2012) *The COR Handbook*. Washington, DC: Director, Defense
Procurement and Acquisition Policy. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/docs/USA001390-
12_DoD_COR_Handbook_Signed.pdf

Department of Defense. (2014) *Panel on Contracting Integrity 2014 summary of actions*.
Washington, DC: Office of the Undersecretary of Defense Acquisition,
Technology, and Logistics. Retrieved from
https://www.acq.osd.mil/dpap/cpic/cp/panel_on_contracting_integrity.html

Department of Defense. (2015, March 30*). DoD standard for Contracting Officer's
Representative certification* (DoD Instruction 5000.72). Washington, DC:
Coetzee, Althea

Department of Navy. (2008, April 8). *Coordination and control of personnel surveys*
(OPNAV 5300.8C). Washington, DC: Chief of Naval Operations.

Duggan, M. (2018). *The impact of industry consolidation on government procurement:
evidence from DoD contracting* (Working Paper No. 18-027). Retrieved from
Stanford Institute for Economic Policy Research:
https://siepr.stanford.edu/sites/default/files/publications/18-027.pdf

Ethics in Government Act of 1978, Pub. L. No. 95-521, 92 Stat. 1824, (1978). Retrieved from
https://www.law.cornell.edu/uscode/html/uscode05a/usc_sup_05_5_10_sq3.html

Federal Acquisition Institute. (2013). *FAC-COR competency model.* (JANUARY 23, 2013). Washington, DC: Retrieved from
https://www.fai.gov/sites/default/files/2013-1-23-COR-Competency-Model.pdf

Federal Acquisition Institute. (2016). *FY16 acquisition workforce competency survey (AWCS) report.* Washington, DC: Government Printing Office. Retrieved from
https://www.fai.gov/sites/default/files/2016-05-04-Acquisition-Workforce-Competency-Survey-Report.pdf

Federal Acquisition Institute. (2018). *Contracting Officer Representative (FAC-COR).* Retrieved from https://www.fai.gov/certification/fac-cor#CertReq

Federal Acquisition Institute. (2018). *Our Mission.* Retrieved from
https://www.fai.gov/about/our-mission

Federal Acquisition Regulations System, 48 CFR 801.690-1, 2016

Gordon, D.I. (2011) *Memo on revisions to the Federal Acquisition Certification for Contracting Officer's Representatives (FAC-COR) from OFPP.* Washington, D.C: Office of Management and Budget. September 6, 2011

John Warner National Defense Authorization Act. (2007), Public Law 109-364, Section 813 (2006). Retrieved from https://www.govinfo.gov/content/pkg/PLAW-109publ364/pdf/PLAW-109publ364.pdf

Maurer, D. *Progress on many High-Risk areas, while substantial efforts needed on others* (GAO-17-317). Washington, DC: Government Accountability Office.

McCammon, S. (2018, October 21*). Statistics How To.* Retrieved from
https://www.statisticshowto.datasciencecentral.com/

McPhie, N. A. G. (2005). *Contracting Officer Representatives: Managing the government's technical experts to achieve positive contract outcomes.* Retrieved from https://contractingacademy.gatech.edu/wp-content/uploads/2014/06/CORs-Managing-the-Govts-Technical-Experts-To-Achieve-Positive-Contract-Outcomes.pdf

National Defense Authorization Act. (2006). Public. Law. No. 109-163, section 841. (2006). Retrieved from https://www.govinfo.gov/content/pkg/PLAW-109publ163/html/PLAW-109publ163.htm

Naval Postgraduate School. (2019). *IRB Student Research Checklist* [Template]. Retrieved from https://my.nps.edu/documents/103449465/105822173/IRB_Student_Research_Checklist-NEW_RULE.pdf

Naval Postgraduate School. (2019). *About the NPS IRB.* Retrieved from https://my.nps.edu/web/research/irb-about

Office of Federal Procurement Policy and Federal Acquisition Institute. (2016). *FY16 Acquisition Workforce Competency Survey (AWCS) Report*. Washington, DC: Government Printing Office. May 4, 2016

Office of Federal Procurement Policy Act of 1974, Title 41 of the United States Code, Chapter 7, Pub.L. 93–400 (August 30 1974)

Office of Personnel Management (August 2009). *Introduction to the Position Classification Standards* (TS-134 July 1995, TS-107 August 1991), Washington, DC. Retrieved from https://www.opm.gov/policy-data-oversight/classification-qualifications/classifying-general-schedule-positions/positionclassificationintro.pdf

Pierce, Rod. (6 Oct 2017). "*Standard Deviation and Variance*". Math Is Fun. Retrieved 18 Jan 2019 from http://www.mathsisfun.com/data/standard-deviation.html

Public Contract Act of 2011, Pub. L. No. 112–81, div. A, title VIII, §864(b)(1), 125 Stat. 1523 (2011). Retrieved from http://law2.house.gov/view.xhtml?req=FAI&f=treesort&fq=true&num=0&hl=true&edition=prelim&granuleId=USC-prelim-title41-section1201#sourcecredit

Salkind, N. J. (2004). *Statistics for people who (think they) hate statistics*. 2nd ed. Thousand Oaks, CA: Sage Publications.

Schinasi, K.V. (2006). *Contract Management: DOD Vulnerabilities to Contracting Fraud, Waste, and Abuse* (GAO-06-838R). Washington, DC: Government Accountability Office.

Taylor, R.S. (2015). *Response to the U.S. Office of Government Ethics review of the Secretary of Defense's ethics program*. Washington, DC: Department of Defense. Retrieved from https://www2.oge.gov/web/oge.nsf/Program%20Review%20Reports/CB3CE37253F253CA85257ED8004EBB9F/$FILE/prdrpt_DOD2015%20Report.pdf?open

Weapon Systems Acquisition Reform Act of 2009, Pub. L. 111-23 (2009). Retrieved from https://www.acq.osd.mil/parca/docs/2009-05-22-pl-111-23.pdf

INITIAL DISTRIBUTION LIST

1.   Defense Technical Information Center
        Ft. Belvoir, Virginia

2.   Dudley Knox Library
        Naval Postgraduate School
        Monterey, California